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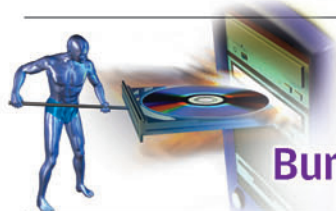
February 2006

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53 Input Devices Put
Through Their Paces



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Just Enjoy Computing



 **Jasubhai**
DIGITAL MEDIA

Editorial

Questioning The Net

IN INTERNET TIME, the Wikipedia-Siegenthaler controversy is already old. But I haven't stopped thinking about the core issue—that of the veracity of the information we find on the Net.

For those of you who missed the story, some joker posted a Wikipedia entry suggesting that John Siegenthaler Sr.—an American journalist, writer, and political figure—had a role in the assassinations of both JFK and Robert F Kennedy. Sure, Wikipedia tightened its editorial process after the incident, but what about the rest of the information out there?

It's time to do some soul-searching. How much of what you find on the Net has been validated and authenticated by either an expert, a government, or any sort of responsible body? Not much.

Actually, it's not entirely about taking for truth the stuff you find online. It's as much about the Net forming your opinions for you. Absolutely anyone can influence anyone else on the Weird Wild Web—one post, one blog, one comment can do it. And who isn't influenced—subliminally or otherwise—by a site's look and feel? Talking about opinions, the views expressed on the Web are almost entirely those of folks on the connected side of the digital divide. And that only increases the disconnect.

I'm mourning the death of scholarship. "Research" for many students has been reduced to the compilation of online "facts" and figures. Students even cite Web sites as their source of information. And then there's the issue of their quoted site having lifted its content from elsewhere on the dub-dub-dub!

Now think plagiarism, and how easy it is to present someone else's research as one's own. Online "research" even fetches degrees for some students. What students don't realise is that in the bargain, their cognitive growth and the ability to think beyond the obvious is being stunted.

Beyond students, even the media sometimes does not question content on the Internet, and uses it for background information on people, issues, political parties, and so on.

I chanced upon this bit of news at theinquirer.net: someone in a Honolulu paper was recently fired for having borrowed too much from Wikipedia. But hey, I'm now thinking, can I trust this piece of online news?

There are real dangers associated with this "Web as Gospel Truth" phenomenon—people self-med-



Deepak Ajwani Associate Editor

"How much of what you find on the Net has been validated by either an expert, a government, or any sort of responsible body?"

icate based on online info. In controversial topics such as religion and history, people quote people, who quoted people, who... you get the idea. In the process, controversies flare out of proportion.

What's really needed is a mechanism—something along the lines of our cover story—that regulates and authenticates all that goes on the Net. Which is very difficult, but not impossible. What is achievable now is the creation of "certified URLs"—sites regularly checked and monitored for content by peers and competitors. The ICANN or another regulatory body could then declare these sites as certified, credible sources of information.

I'd like to see a VVV—a Verified Valuable Vault of information out there.

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Printed and published by Maulik Jasubhai on behalf of
Jasubhai Digital Media Pvt Ltd,
26 Maker Chambers VI, 2nd Floor, Nariman Point,
Mumbai 400 021, India and Published from Mumbai
Editor: Maulik Jasubhai, 26 Maker Chambers VI, 2nd
Floor, Nariman Point, Mumbai 400 021

Printed at Magna Graphics (I) Ltd.,
101 C & D Government Industrial Estate Kandivli,
Mumbai 400 067

COVER
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Imaging **Pradip Ingale**
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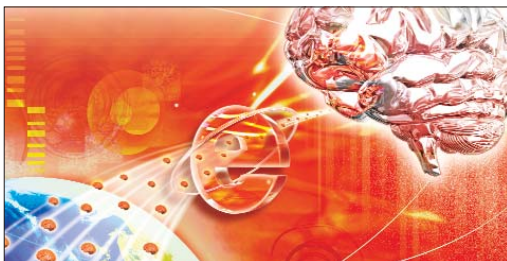


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How do your games look so realistic? We took our machines apart to find out what makes 3D APIs tick

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Having trouble organising your thoughts? Take an old, trusted method, and go tech!



60 Extra Large, Please



They're more realistically priced now, and a DVD-Writer has become an essential addition to your PC ensemble. We put a range of them under fire to get you the best

72 Roast 'em Good



Sure, you've bought a DVD-Writer, but you still need to know what software will prevent those DVDs from becoming coasters



80 Clicks 'n' Keys

We often underestimate the importance of a good keyboard and mouse. We tested over 50 of them to bring you the best desktop companions

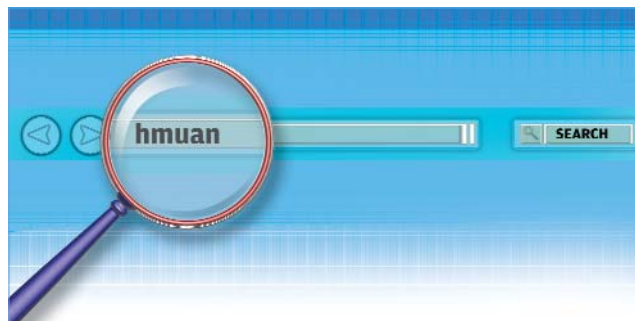
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Our trusty Agent and his thoughts on the best graphics card for you

Digital Business

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Handy little PC cards enable anytime, anywhere Internet access, but are they worth the investment? ☒



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So let's get some business over those errors!

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We're a BPO centre for many foreign clients, but are companies here ready to themselves outsource their CRM operations?

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More and more businesses are setting up their own online payment gateways. But are they happy with them?

February 2006

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Batten down the hatches! Man the torpedoes! But nobody cares enough to hack you! ☒



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Two tactical shooters and the "Greatest Strategy Game of all Time"? Fighting for the World is a lot more fun! ☒



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Carmen Electra says she feels "obligated" to sleep with the eBay buyer who bid the highest on a date with her!

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He's no artist, but Justin Frankel's Winamp is the reason you have so much (illegal!) music on your PC

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Who'd have thought they'd be good for humankind?

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DIGITAL PASSION

Civilization IV Demo



Intriguing new gameplay options plus even more-refined core gameplay; great presentation with powerful new 3D engine and great new soundtrack—all combine to make Civilization IV one of the best strategy games thus far.

ToCA Race Driver 3 Demo



ToCA Race Driver 3 takes the variety of motorsport experiences available in Race Driver 2 and expanding on it even further, so no matter what your taste in racing, you'll find something to suit you.

GAMES

- ALFA: Antiterror Demo
- The Stalin Subway Demo

DEVELOPER TOOLS



Borland Delphi 2006

Borland Delphi Professional is designed for individual developers, ISVs, and smaller organizations building desktop and Web applications with local database connectivity.

- Jini Technology Starter Kit v2.1
- .NET Framework 2.0 SDK (x86)
- Sun Java Wireless Toolkit 2.3 Beta



- Axiomatic Multi-Platform C 1.3.6
- Borland Delphi 2006 Prerequisites
- Stylus Studio XML Professional Edition 2006

LINUX

- SuperMaze Open 1.0
- Web Performance Trainer 2.8 Build 631



DIGITAL TOOLS

Corel Paint Shop Pro X



Corel Paint Shop Pro X delivers a complete set of photo-editing tools to help you create professional-looking photos fast.

MULTIMEDIA

- iClone 1



- Photo Pos Pro 1.24
- iSyncTunes 1.2
- Akram Media Creator 1.9
- Ashampoo Photo Commander 4.4
- DVD Album Creator 2.0.1
- IdImager Professional Image Manager 3.0.1.2
- InAlbum Deluxe 2.5
- Photo Collage 1.35
- SmartSound Sonicfire Pro 3.2.2
- Stoik Imagic 3.5

INTERNET

- RoboForm 6.6
- SETI@home 5.2.13
- Skype 2.0 Beta with voice
- ZoneAlarm 6.1.737
- DownloadStudio 3
- mCore SMS & WAP Push Component
- Offline Explorer Enterprise 4.0 SR1
- Super Ad Blocker 3.1
- WebDrive 7

SYSTEM

- PDF Studio 2.60
- WinBackup 2.0 Professional 2.0 (2.1.2)
- nVidia ForceWare Graphics Driver (Windows 2000/XP) 81.98
- Virtual Desktop Toolbox 2.62.3
- Advanced Uninstaller Pro 2006 7.5
- VisualCron 2.7.5

ESSENTIALS

- Adobe Reader 7
- DirectX Redistributable 9.0c
- JRE Version 5.0 Update 6
- K-Lite Mega Codec Pack 1.46
- Norton AntiVirus 9.0 Virus Definitions 12/29/2005
- Microsoft .NET Framework Version 2.0 Redistributable Package (x86)

DIGIT ARCHIVE

- Digit Software Archive 2006 Beta
- .NET Framework 1.1

This is the beta testing version of the Digit Software Archive we are working on. We request our readers to participate as beta testers by installing it, trying it and sending feedback and suggestions to cdcontent@jasubhai.com



DIGITAL BUSINESS

VisNetic MailServer 8.3.5



VisNetic Mail Server is a versatile multi-featured mail server for Windows operating systems. VisNetic Mail Server combines a simple, easy-to-use administration console with unmatched mail server security, speed, and scalability.

MindManager X5 Pro



Mindjet MindManager Pro 6 is a mind mapping tool that transforms brainstorming ideas, strategic thinking, and business information into blueprints for action, enabling teams and organizations to work faster, smarter, and with greater coordination.

PRODUCTIVITY TOOLS



- Mars 2.7
- EasyWare B2B Commerce 4.004
- Audiomatic 1.10.05
- Dictation 2005 5.9.24
- InerTrak 3
- Intellicad 6.1.19.0
- Mercury Document System 1.4
- Personal Stock Monitor Gold 6.0.1 build 266
- ProChef Premier 4.3
- Sawmill 7.2
- SpeechTools 2.1
- TradeAccountantPro 3.4

MOBILE APPS

Xington Ringtone Maker 4.2.15

Make your own ring tones from your favorite audio files. Send them to your phone wirelessly over the air without cables or Bluetooth



- AudioGizmo Ringtone Creator 1.7.1
- piAccess Mail 1.0
- QuickIM MSN Messenger 1.3
- SmartRead for Pocket PC 2
- SmartRead for Smartphone 2
- Spore Cubes Deluxe (Pocket PC) 1.07

DIGITAL LEISURE

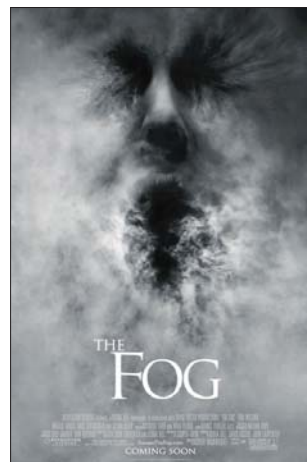
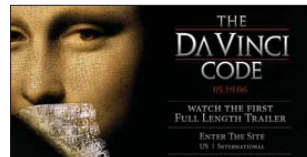
SMALL GAMES
Gunbound v.474

GunBound is about an endless war fought with one-person-driven vehicles called Mobiles.

- Billionaire II 1.08
- GUNNER2 2.25.478
- PING-POOL 1.0.0.0

VIDEOS

- Date Movie
- The Da Vinci Code
- The Fog



DIGITAL PASSION

CRD 5.7



CRD is an application that saves time and money by defining single or packages of Crystal reports, schedule, and run them automatically, and send the reports to print, fax, disk, FTP, sms or e-mail in a number of standard formats.

Database Designer Enterprise Edition 9.83L



Database Designer is a tool for designing and developing standalone custom commercial database applications for beginners and experts alike. No programming experience is required

JavaMail API 1.4 Early Access

This release provides an early access implementation of the JavaMail 1.4 API.

DEVELOPER TOOLS

- ▀ AceHTML Freeware build 8
- ▀ DFM2HTML 1.2
- ▀ EasyHTML
- ▀ EmEditor Professional 5



- ▀ HTML-Optimizer Pro 4.4.3
- ▀ Zeus for Windows 3.95s

LINUX

LimeWire 4.10.1 Beta

LimeWire is a multi-platform Gnutella client with nice features like auto-connect, groups, browse host, multiple search, upload throttling, connection quality control, library management and sophisticated filtering.



- ▀ sudoku 0.3
- ▀ Conky 1.3.5
- ▀ CPU Info 0.1
- ▀ Deskbar Applet 0.8.7
- ▀ DGuitar 0.4.2
- ▀ gThumb 2.7.2
- ▀ HighMoon 1.2.3
- ▀ mpgedit 0.72 Beta
- ▀ nut 11.1
- ▀ Parallel BZIP2 0.9.5
- ▀ phpBB 2.0.19
- ▀ Splashy 0.1.6
- ▀ TjMSN 0.51
- ▀ TuxGuitar 0.2
- ▀ Web Statistics Montage 3.5

DIGITAL TOOLS

PicaJet 2.5



PicaJet offers direct import from your camera, image sharing via email or Web gallery, automatic photo enhancement, personal ratings and categories, as well as printing features.

MULTIMEDIA

- ▀ AV MP3 Player-Morpher Basic 2.0.109
- ▀ DivX DVD Ripper 1.5
- ▀ Flash CD & DVD Burner 2
- ▀ MediaMonkey 2.5.1
- ▀ Name Dropper 3.4
- ▀ Preclick Gold Photo Organizer 2.8
- ▀ Acoustica 3.3 Build 290
- ▀ Advanced X Video Converter 3.9.43
- ▀ AudioLabel CD/DVD Labeler 3.1
- ▀ CATraxx 7.01
- ▀ DVD-Cloner 3
- ▀ Easy CD-DA Extractor 9.0.1 build 2
- ▀ TOCR Viewer 2
- ▀ UltraISO

INTERNET

- ▀ Internet Download Manager 5.01
- ▀ Avant Browser 10.1 build 40
- ▀ IMDB-GRAB 0.5.2
- ▀ Opera 9 Beta
- ▀ Parental Filter 0.25
- ▀ Peer2Mail 1.6 build 6
- ▀ SmartFTP 1.5.991.24
- ▀ Turbo Torrent 1.1.2
- ▀ Weather Watcher 5.6.5
- ▀ Anti Tracks 6.0.1
- ▀ SpyStopper Pro 4.3

SYSTEM

- ▀ Cheetah CD Burner 3.35



- ▀ AntiVir Personal Edition 6.32
- ▀ DP-Multicrypter 1.6.01
 - ▀ Anti-keylogger 7.1
- ▀ Registry Mechanic 5.1 for Windows
- ▀ Super Utilities Pro 6.2
 - ▀ BeInSync 1.6.21
- ▀ WinXP Manager 4.95

ESSENTIALS

- ▀ Ad-Aware SE Personal Definition File ▀ SE1R84 (12/28/2005)
- ▀ Avast! Home Edition
- ▀ IrfanView
- ▀ Kerio Personal Firewall 4.2.3
- ▀ Spybot S & D 1.4
- ▀ Spybot S&D Detection updates 2005-12-30
- ▀ WinRAR 3.51

DIGIT ARCHIVE

- ▀ Digit Software Archive 2006 Beta



DIGITAL BUSINESS

Belltech Business Card Designer Pro 3

Belltech Business Card Designer Pro helps you create professional quality one or two-sided, horizontally or vertically aligned business card using text, your own logo, rectangles, circles, lines, and shadows.



Free Mind



FreeMind is a premier free mind-mapping software written in Java. The recent development has hopefully turned it into high productivity tool.

PRODUCTIVITY TOOLS

- ▀ MailDetective 2.0d



- ▀ PDF ReDirect 2.1



- ▀ Photocopier 3.02
- ▀ Planner 1.1.3
- ▀ Power AutoPlay Menu Creator 6.0
- ▀ ABIX 6.15
- ▀ After Market Sales Assistant Menu Selling Software 1
- ▀ AtomicRobot Information Manager 4.1
- ▀ Business Card Designer Plus 8.5.1
- ▀ Circuit Shop 2.06
- ▀ ListPro 4.1
- ▀ My Notes Keeper 1.4
- ▀ Passwordstate 2.0

MOBILE APPS

iPod Access 2.6

iPod Access is the premier application for transferring songs from your iPod to your Windows PC.

- ▀ Palm Finance Genius 1.24
- ▀ Coding Workshop Polyphonic Wizard 1
- ▀ Enigma in the Wine Cellar 2
- ▀ GSM SIM Utility 5.15

DIGITAL LEISURE

Ski Alpin 2006 demo

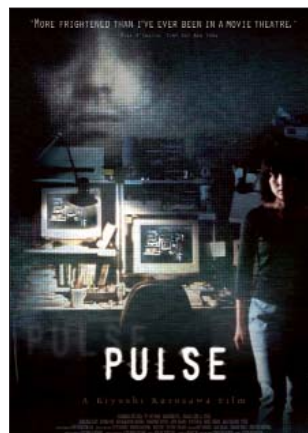
49Games has released a playable demo for Ski Alpin 2006 (a.k.a. Bode Miller Alpine Skiing), allowing you to try out their new downhill skiing sports sequel.



GAMES

- ▀ Alive Directory Uno 2.0 Demo
- ▀ Wordlers 1.0
- ▀ YOOLines 1.11
- ▀ Age Of Robots 1.0
- ▀ AstroFleas 1.4
- ▀ BrainsBreaker 4.6.109
- ▀ BVS Solitaire Collection 5.5
- ▀ Jigsaws Galore 6

VIDEOS



By Demand

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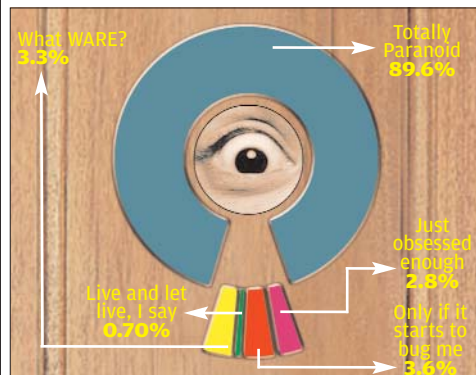
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- ☐ Newspapers
- ☐ Feeds and e-mail newsletters
- ☐ Visiting Web sites such as
CNN and BBC
- ☐ I don't follow the news

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In General... Anything that doesn't fit into the other sections—from upcoming technology to personal anecdotes—should be posted here Moderators: Moderators, MemberMods, Administrators, Trusted Members	1692	29241	Mon Jan 23, 2006 12:02 pm akshavi
Across The Board			
Open Source A place where you can talk to like-minded people about the fastest growing software movement today! Moderators: Moderators, MemberMods, Administrators	1156	8825	Mon Jan 23, 2006 11:58 am tech_your_future
QnA This is the place to share what you know, and learn what you don't. If you have questions that do not qualify as either Hardware or Software questions, post them here... Moderators: Moderators, MemberMods, Administrators, Trusted Members	10023	66481	Mon Jan 23, 2006 12:16 pm allvyndima
Software Troubleshooting Issues related with your OS, applications, system security, configuration of network, browsers, customizations, driver support, tweaking, audio-video playback problems and programming can be discussed here. Moderators: Moderators, MemberMods, Administrators, Trusted Members	584	3295	Mon Jan 23, 2006 11:01 am parthbarot
Hardware Troubleshooting Discuss basic Hardware problems, find solutions to your hardware queries, upgrade blues. From Hardware Overclocking to Cooling and Case Modding all queries, howtos, solutions go here. Moderators: Moderators, MemberMods, Administrators, Trusted Members	649	6519	Mon Jan 23, 2006 12:24 pm sagarqv
Member Reviews			
Reviews A forum to discuss/review ONLY software and hardware products. All your queries about the same go into Respective Troubleshooting Sections and QnA. Your views and first-hand experiences on any software or hardware from OSes to Graphics cards are all welcome here. Note: The views/reviews contained within	5806	48722	Mon Jan 23, 2006 11:32 am a3x

Xbox Booming

The Xbox 360 debuted on November 22 in North America. 6,00,000 Xbox 360 units have been sold in the US thus far, which should easily see Microsoft through to their target of around 5 million by the end of the current business year, which ends June 30, 2006.



Google Goes Mobile

Google is offering a Personalized home page to mobile users. You can preview Gmail, view the latest headlines, get weather forecasts, stock quotes and movie showtimes, and receive RSS and Atom feeds—all while on the move. For more details, visit <http://mobile.google.com/personalized>.



Enter

Anupam Kher

Actor and Director

Anupam Kher's career spans over two decades. Actor par excellence, he has portrayed over two hundred characters since his debut in *Saraansh* (1984). Besides being on the chair for the Central Board of Film Certification, he has also acted in and produced the critically acclaimed *Maine Gandhi Ko Nahi Mara* (2005). So what does he have to say about tech?

What does technology mean to you?

Convenience is the word I would most strongly associate with technology. It has definitely made life easier.

What do your online activities entail?

Online surfing and e-mail are regular activities. I find the cell phone quite indispensable too. I also contribute to Deepak Chopra's blog.

What gadgets do you own?

I am not as tech-savvy as I would like to be. Although my mobile phone, a Sony Ericsson P900, is a gadget, I find it to be more of an everyday tool. I also own a desktop PC—a Sony Viao.

Has technology helped you in your career?

I feel contemporary courtesy the gadgets I own. It aids me in widening my horizons, both personally and in terms of my career.

WINMACS?

Windows on Apple Macs or MacOs on PCs?

Apple has just released their brand-new range of Intel-based Macs in January—a full six months ahead of schedule! We've never heard of an IT company that delivers such a large scale turnabout in architectures and OSes so far ahead of schedule, but who cares? The entire launch seems to be overshadowed by new possibilities!

Will we be able to load Windows on Macs now? What about loading Mac OS on a PC? Ever since Apple made its

announcement last year about the changeover to Intel's x86 platform, leaving its long-time partners IBM and Motorola, talks of interchanging operating systems between PCs and Macs have dominated the grapevine.

What's even cooler is that one can imagine having Mac OS and Windows XP/Vista in a dual-boot scenario.

Neither Apple nor Microsoft seems to care about any of these ideas, and Apple has specifically stated it

will not take any measures to stop those desiring to run Windows on Apple hardware. Microsoft, on the other hand, were actually happy, saying any new computers hitting the market that can potentially run Windows is good news!

What we're more interested in, however, is how fast small-time computer vendors in India will start carrying ("special") Mac OS CDs/DVDs to install for customers who want to "try" Mac OS! Since PCs are traditionally cheaper than Apple's computers, it might be Apple's turn to fight off the beast that is piracy.

Another interesting side to the release of the Intel-based Macs is the fact that they're priced identically to their former IBM/Motorola-based predecessors. One would think that with the scale at which Intel operates, their chips should be a lot cheaper! Perhaps Apple doesn't want to lose its perception of a premium product, or is thinking that existing Mac users would not be too happy if prices fell drastically. One thing's for sure: if you were thinking Macs would become more affordable, forget it—at least for now!

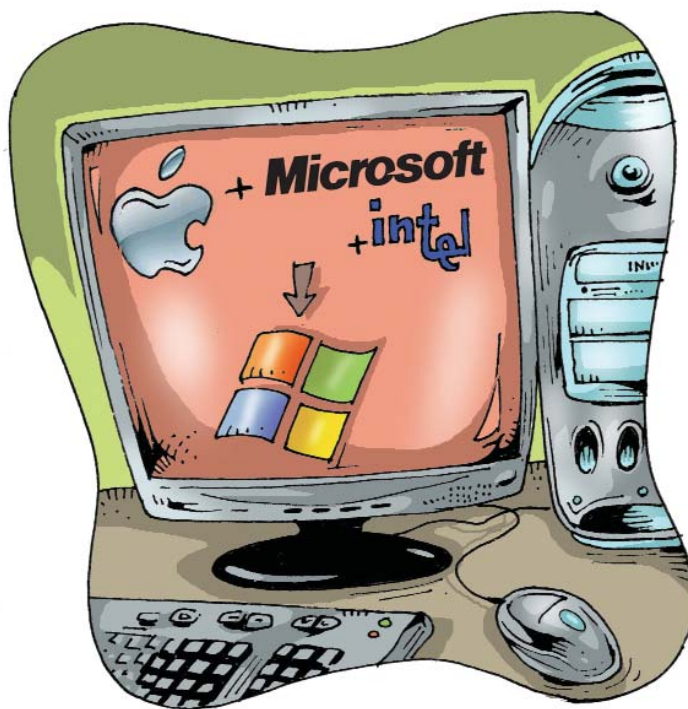


Illustration Harsho Mohan Chatterraj



Security Watch

Windows SETABORTPROC Arbitrary Code Execution

The Problem

A vulnerability has been discovered in Windows, which can be exploited to compromise a vulnerable system. The vulnerability is caused due to an error in the handling of Windows Metafile files (files with the .wmf extension) containing specially-crafted SETABORTPROC "Escape" records.

The vulnerability, rated "extremely critical," can also be exploited automatically when a user visits a malicious Web site using Internet Explorer. It has been confirmed on a fully-patched system running Microsoft Windows XP SP2, Windows 2000, Windows XP SP1 and Microsoft Windows Server 2003 SP0 / SP1 are also affected.

The Damages

The "Escape" records mentioned above allow arbitrary user-defined functions to be executed when the rendering of a WMF file fails. This can be exploited to execute arbitrary code by tricking a user into opening a malicious ".wmf" file in Windows Picture and Fax Viewer, or previewing a malicious .wmf file in Windows Explorer (opening a folder containing a malicious image file).

The Solution

Apply the appropriate patches. For Windows 2000 with SP4, visit <http://snipurl.com/digitsec1>. For Windows XP Professional with SP1 or SP2, visit <http://snipurl.com/ld40>.

WE'VE GOT YOUR NUMBER

India's Employee Database

Nasscom (National Association of Software and Service Companies) recently announced the launch of the world's first IT professional manpower database.

What's this database, you ask? Well, the database contains your name, address, phone number, current employer, and more, along with details of your past employment, and, if applicable, problems with your previous employer.

Using this database, employers can find out whether or not you have any legal suits against you for criminal behaviour, as well as recommendations, felicitations, past history, etc.

A first-of-its-kind for IT professionals across the globe, the National Skills Registry (www.nationalskillsregistry.com) is the first step towards security and reliability. The BPO industry, perhaps more than any other sector, needs this sort of protection: early in 2005, India was rocked by a \$4,00,000 (Rs 1.8 crore) online theft from a bank outsourcing to India.

Supposedly, this happened because someone

sold personal credit card information and used that to withdraw and transfer the two crores of rupees.

With over 1 million people working for the BPO industry, and 3 million more indirectly employed by it, it's a huge decision when you hire someone. The database will also help the police run background checks when complaints are made against employees. BPO firms can register with the database service and even choose to leave negative comments about—pay attention here—an employee's behaviour, mood, and so on!

The FAQ lists the benefits to hiring companies (subscribers to the database). These include the fact that the "menace of bloated resumes will be eliminated," which, we think, is a good thing. The risk of hiring an employee on the basis of forged documents will be minimised. Also, the benefit of background checks done by any of the NASSCOM member companies will be available to all other members—this will save the cost and time typically involved in a background check. Finally—and we like this point—the FAQ says that with this database in place, Indian Industry can "confidently claim higher standards of recruitment practices and retain its competitive advantage."

How will such a database actually benefit

HOT

SATA And SATA II

If you're getting a new hard drive, you'll probably opt for SATA. The list of advantages over IDE is long, including higher data bandwidth, longer cables, hot-swapping, and much more. SATA II can be twice as fast.



EIDE (PATA) Drives

EIDE is gradually being phased out—they've been around too long. Intel's plan, for example, is not to support IDE drives after 2007. This is good news for compulsive upgraders!



NOT

you? We learn from the FAQ at nationalskillsregistry.com that "benefit to the IT and ITes industry is your benefit." It seems that foreign clients, government and public bodies, are increasingly insisting on background checks of individuals before recruitment. And thus, if you're registered and certified as crime-free and squeaky-clean, you'll be able to "showcase" yourself to foreign clients.

Then there's the issue of faking resumes; with a database of this kind in place, you benefit because the fakers won't stand a chance. (Unless you're a faker yourself, in which case you stand to suffer!)

There's also the issue of the time taken for background checks. "Your employer will save time on



One Silly Question

"Whom do you blame when your computer crashes?"



"My technician"
Sharmili Borkar, Goa



"The Government?"
Gagan Saini, Punjab



"My brother, coz he ruins most things!!"
Delma Sarkar, Durgapur



"You, of course!"
Chintan Makwana, Mumbai



"Bill Gates, I think!"
Saaquib Sawant, Maharashtra



The Digital World

A Round-up Of Technology News From Across The Globe

UNITED STATES

According to a recent survey, 33 per cent of American teenagers believe petrol-powered automobiles will be obsolete by 2015. Other figures are 26 per cent for CDs, 22 per cent for desktop computers, and 17 per cent for landline telephones.

UNITED KINGDOM

The Government plans to hold global online gaming talks this year to seek support for its move to regulate and control the fast-growing online gambling industry. The Government is also concerned about protecting children from gaining access to online gambling sites.



CHINA

A study led by the Shanghai Community Youth Affairs Office (SCYAO) found that 14.2 percent of teenagers are addicted to the Internet. An official with the SCYAO said that Internet addiction is also part of the cause for crimes by minors.

JAPAN

Usen, a cable radio operator turned multimedia content provider, has started a four-channel streaming radio service via the 3G cell phone network of NTT DoCoMo. The service is available at no cost to users of some models of DoCoMo's 3G handset.



MEXICO

A nationwide electronic-surveillance system is being deployed. The project will enable the Agencia Federal de Investigaciones to intercept phone conversations and online messages from every telecom network in Mexico. The new system is slated to help prevent acts of major federal crimes.

PAKISTAN

Pakistan will be linked to India with a cable laid through the Wagah border as part of an international system. The country will have five international links by the middle of 2007. This includes, besides SEA-ME-WE (South-East Asia-Middle East-Western Europe) 3 and 4, two new undersea cable links and a terrestrial fibre optic link with India.

the background check since your background check information is only a click away," the FAQ says. And naturally, this means the formalities will take less time to complete.

But here's the scary part: as the database grows larger and more popular, the industry may decide to recruit *only* registered candidates. OK, so if you're clean, you may not have too much to worry about, but what about the idea of having every personal detail of yours recorded in the database...

Big brother, anyone?

DELL FOLLOWS

First Apple, Now Dell?

In another partnership turnaround, a lot of which has been happening these days, a spokesperson at Dell Computer announced that they were open to using AMD chips in their systems.

This is huge news because Dell is the world's largest branded computer assembler, and Intel's

biggest customer.

To quote Dell's CEO Kevin Rollins: "We want the very best technology for our customers." He went on to add that they were open to change.

This move is not totally unexpected, however, as Dell's revenue growth took a beating after they were forced to drop prices to deal with stiff competition. The next logical step would obviously be to use cheaper components without losing on performance. All this was very clearly spelling out AYE EMM DEE to the world, and now Dell themselves have admitted it!

CISCO VS SONY?

Cisco Set To Enter Consumer Electronic market

In an interview with the *Financial Times*, Cisco's Chief Development Officer, Charles Giancarlo, said

Three Incredibly Useful Sites

Et Cetera

www.stumbleupon.com



Stumbleupon.com

The StumbleUpon toolbar lets users interact through sites they visit and rate. You mark sites you find useful as "I Like It" on the toolbar, and those you don't like, you tag with "Not for me." In the process, you "stumble upon" like-minded souls. The site also links to pages matched to personal preferences.

www.imd.gov.in



Imd.gov.in

Now we have the weather reports in India available online—just visit the Indian Meteorological Department site. Besides being able to access to the All India Daily Weather Report, you can check weather charts, satellite images, earthquake reports, and even severe weather warnings. The site provides meteorological facts and forecasts for weather-sensitive activities such as agriculture, shipping, aviation, and so on.

www.alddaily.com



Aldaily.com

Get your fill of philosophy, literature, culture, history, music and views and reviews at this site. There are links to articles and essays of note, apart from links to magazines, columnists, blogs, music and more. From Greek mythology and aboriginal art to the latest in sci-fi, this is a very eclectic online collection for serious readers.



Photograph Parag Kalra, Nagpur

Every month, *Digit* will carry a caption for a photo. Come up with a funnier caption, and win a prize! Entries will be accepted till the 15th of this month.

Beat That!

Digit's Caption

"Mobile Paanthelas?"

Last Month's Winner!

"HP - Happy Pirates"

Tenzin Jamyang, Delhi



E-mail your caption with the subject 'Beat That', and your postal address, to beatthat@thinkdigit.com and win **CMMI**

by Mary Chrissis, Mike Konrad and Sandy Shrum
Published by Pearson Education, Delhi



that the increased demands of network-enabled devices could see the networking behemoth enter an all-new segment—consumer electronics. He added, "Consumer electronics companies have been able to compete on a standalone device, but the dynamics of the market are changing. The Internet and new networking requirements are enough of a disruptor for us to enter a new market."

This change has occurred due to the fact that every manufacturer of consumer electronics devices want to make Internet-ready gadgets. Since Cisco also owns Linksys, which is one of the biggest manufacturers of home networking products, it's easy to see how Cisco could enter this somewhat uncharted territory.

Another big advantage Cisco has over its rivals, apart from being the largest of them, is the fact that they have a great existing relationship with online giants Google and Yahoo!.

PICTURE KIOSKS

Kodak Launches Picture Maker

To keep their fingers on the pulse of current trends, Kodak has launched a Kiosk printing solution called Kodak Picture Kiosk. Kodak has realised that now, with everyone buying digital cameras, it's only the printing of photos that is still an irritation. But what if you could print out those photos of your recent holiday while waiting at a station for a train? It

sure beats having to go to a photo developer and waiting or coming back the next day.

What's even better is that the Kiosk recognizes a variety of inputs: MMC, SD, XD, Memory Stick Duo/Pro, CF and Smart Media Cards, and also Kodak Picture CDs, Data CDs with JPEG, TIFF and BMP files, floppy disks, and even camera phones via Bluetooth and infrared. And it's not just printouts that you

can take—the Kodak Picture CD output format is also available.

Kodak has started providing these Kiosks to resellers in January 2006, so by the time you read this, you might have already seen a few around the place.

Over the years, we've seen a lot of companies bring out Kiosks for Internet

surfing and information services, and honestly, none of them gained any popularity. This idea, however, seems promising, and Kodak gets two thumbs up from us.

NOT THIS YEAR

SP3 To Be Released In 2007

Though it seems security patches are being released faster than ever before, there's not going to be a Windows XP SP3 for at least a year and a half. Microsoft recently announced they were going to focus on Vista, and only release a security pack for Windows XP in the second half of 2007!

This is bad news for people who aren't on broadband. Every time you format your PC because of a virus, spyware or a bloated registry, you're going to have to re-download all the security patches and install them all over again.



GENDER



BENDERS

Anoop Janardhanan vs Yamini

Make JPEG files always open with Internet Explorer



50 sec

"That's easy", said Anoop when we challenged him with the task. It barely took him 20 seconds to change the file type. When asked if he knew the conventional method to do it, he took up the challenge and clicked Tools > Folder Options, and fumbled about a little before choosing File Types. There, he chose "JPEG file", clicked "Change", chose "Internet Explorer" and closed the window. We definitely have our winner—he did more than what we'd asked him to do!

3 min
25 sec

Sheer excitement lit up Yamini's face when we mentioned the task. Once at the comp, she immediately opened the image and right-clicked unsuccessfully, losing a precious minute and a half in the process. After several futile attempts and a little nudging from us, she right-clicked on the file and chose Open with > Choose program > Internet Explorer. She forgot to check the "Always use..." box, and had to return to the menu for that!

The numbers say it all: thus far, Microsoft has released 54 patches for Windows XP *after* the release of SP2. So if you format your computer, that's at least 54 patches you will have to download. Also, SP2 came 51 patches after the release of SP1, and SP1 contained 33 patches. If all you have is an original vanilla Windows XP install disc,

you have a whopping 138 OS patches to install!

The news has put to bed speculation about whether SP3 would come before or after Vista was launched. For now, perhaps everyone will have to make do with third-party update patches such as AutoPatcher XP, which are not really official or recommended by Microsoft. However, it

beats connecting to Windows Update and downloading patches for hours on end, only to have to repeat the procedure if you format again!

A FIRST FOR SEAGATE

Seagate Launches Next-Gen Hard Disk

In mid-January, hard disk I vendor Seagate Technology started shipping the industry's first 2.5-inch notebook PC hard drive built with perpendicular recording. The Momentus drive has a capacity of 160 GB.

Applications for the new technology extend beyond laptop and desktop machines to digital music players, mobile phones, and even enterprise-class hard drives. Over time, said Michael Hall, a spokesperson for Seagate, PR would improve storage capacity by five times the current level.

This is by no means the first commercial hard drive based on PR. A relatively unknown company called Showa Denko K.K. (SDK) commercialised, for the first time in the world, Perpendicular Recording in July of 2005. SDK started commercial production of 1.89-inch media for use in mobile music players with a 40 GB capacity—double the capacity of conventional products of the same size at the time.

Perpendicular recording (refer *Towards Terabytes*, Digit, October 2005) records data on hard disks by orienting the magnetisation of the bits perpendicular to the disk surface, rather than on the plane of the surface, as in done in Longitudinal Recording (LR). LR has almost reached its limits, meaning that so much data is packed onto a disk surface using LR that further increases are not possible. PR is the only way out, and gradually, the industry will shift entirely to PR technology. Seagate has always been a leader in PR research.

US VS REST OF THE WORLD

A New Forum For Internet Governance

In November of 2005, representatives of national governments, corporations and nonprofit organisations met in Tunisia for a summit that was expected to decide the future of the management of the Internet. Countries such as China, Cuba, Mozambique and Zimbabwe charged that the US government enjoys too much influence over the way the Internet is managed. And this was after an earlier meeting in New York that ended in a squabble between the United States and The Rest Of The World.

Basically, The Rest Of The World has long sought

Buzzword
of the MONTH

Intel Viiv

Viiv is a digital entertainment platform from Intel. It's something like a Media Center PC with many more features. PCs centred on Viiv will arrive in the first quarter of 2006.

Viiv technology-based PCs will help make it easier to download, store, view, manage and share all kinds of digital entertainment and information on a choice of TV, PC, laptop and

hand-held viewing screens. For example, you can download and watch a movie on the Viiv PC in the living room, while others listen to music streamed from the same PC through a digital media adapter in another room.

Intel says Viiv will pave the way for new entertainment experiences. But some say Viiv is just an attempt to brand a media-capable PC!

WHAT WHEN WHY WHERE WHO HOW

W5H

WHAT WHEN WHY WHERE WHO HOW

Windows Live**What is Windows Live?**

It's hard to define Windows Live in a couple of sentences. But according to Microsoft, "Windows Live is based on one simple idea—that your online world gets better when everything works simply and effortlessly together. So all the things you care about online—your friends, the latest information, your e-mails, searching the Net—all come together in one place." Essentially, it's a central point to access many Web-hosted services such as e-mail and IM.

When was Windows Live launched?

It went product by product. The e-mail and IM services were launched in November, and more and more services are being added.

Why Use Windows Live?

Mostly because you can access several things in one place. You have access to several services—for example, at <http://safety.live.com/site/en-US/default.htm>, you can check your computer for problems without having to download software.

How can one try out Windows Live?

Visit <http://ideas.live.com>. You'll see several sections—explore all of them! In the "Live.com beta" section, click on "Try it". You'll get to a page where you can sign up for the service, then customise "your page" by adding content to it.

Who gets to test the beta?

It's product-by-product. Microsoft sent invitations for testing Windows Live Messenger to a handful of testers, who can invite their friends later. You can visit various forums to try and get invites for beta-testing various Live components.

Where can I find more information?

Visit www.live.com to get an idea of what Windows Live offers.

a greater stake in how the Net is governed. And now, the UN has taken the first steps towards setting up a new international forum (the Internet Governance Forum, at www.intgovforum.org) to promote global interests in the governance of top-level Internet domain and country names. The Forum will not have the official decision-making function of the Internet Corporation for Assigned Names and Numbers (ICANN) in the US, it is seen as the first step in the evolution of international governance.

Greece will host the first meeting of the IGF, which is scheduled to take place by the end of June. Formally, UN secretary-general Kofi Annan has said that the role of the Forum would be to "bring all stakeholders together to share information and best practices and discuss difficult issues."

The US argues that surrendering its role in governing the Internet could hand control over to countries that do not recognise freedom of expression! Now *that's* an interesting argument!

FEARS ABOUND

Nanotech Laws Don't Protect The Public

You've probably heard of the possible dangers to the environment posed by nanotechnology—imagine what swarms of invisibly small nanoparticles, smaller than even amoebae, could do, and where they could get into! An independent report released January 11 concluded that current US laws and regulations cannot adequately protect the public against the risks of nanotechnology.

Animal studies have shown that at least some nanoparticles can cause deadly airway blockages, and can migrate from nasal passages into the brain and other organs, where they may cause metabolic problems. Other studies suggest they can trigger environmental damage that would be difficult to reverse once the minuscule particles disperse into soil and water.

Unless existing laws are modified or a new one is crafted, this latest report warns, the immense promise of nanotech, predicted to be a trillion-dollar industry by 2015 and the technology of the century, may be nipped in the bud (a poor metaphor, actually—it's hardly a bud now!) by either a disaster or an economically damaging crisis of public confidence.

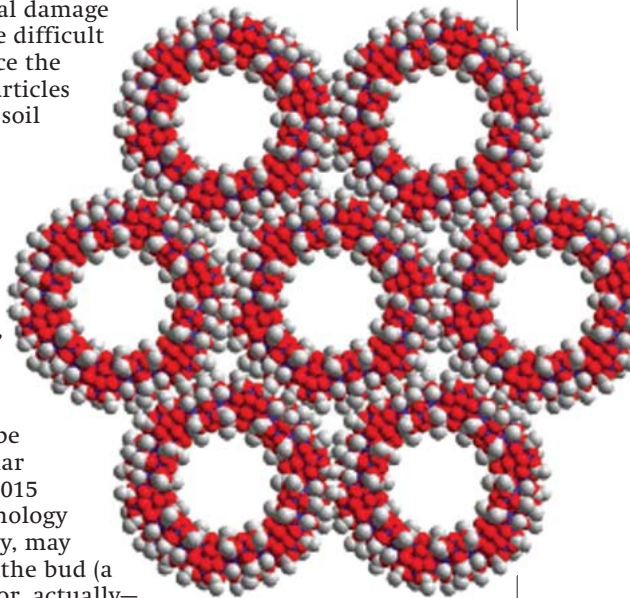
"There is a chance to still do this right and learn from previous mistakes," said J Clarence Davies, the author of the study and an environmental policy analyst who is now with Resources for the Future, a think-tank on environmental issues.

"We know from what happened with agricultural biotechnology and nuclear power that if you don't have public support, or at least public tolerance, a field's potential is not going to be realised. For nanotechnology, I don't think existing systems or laws can serve this purpose," said Davies.

Several government officials and industry representatives disputed the findings. Among them was E Clayton Teague, director of the National Nanotechnology Coordinating Office, which oversees the federal US government's \$1 billion

annual investment in nanotechnology.

"We still have so much to learn," he said. "You get one paper that says it's extremely toxic and harmful, and another that says it's not only not toxic, it's beneficial. All the



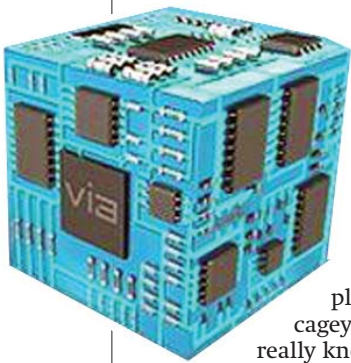
Scientists can assemble structures as complex as these from nanoparticles. This *entire* structure is 2 nanometres in diameter!

agencies we talk to have said that with the info currently available, their regulatory authorities should be adequate."

And so the debate continues—whether nanotech is safe or not, whether we know enough about it to go ahead with it or not. It has been hailed by some as a revolutionary science—and by others as a severe threat to mankind. The technology has spawned fears of unstoppable "grey goo" taking over the planet.

It's something like the cloning issue—who is to say whether human cloning is a good thing? Visit www.nanotech-now.com for lots of information on nanotechnology, what it promises, and what's being done.

So do you think nanotech is *the* technology of the 21st century, or do you think we're fools rushing in? Do write in! ☒



Mystery Cube

There was this thing called the ViaCube. It's supposed to simplify life by combining voice and fax communication, task management, calendaring, contact management, e-mails, IM, SMS, and even videoconferencing "into one integrated, seamless platform." ViaCube were rather cagey about the device, so nobody really knows *what* it is or how it does what all it's supposed to do. And why is it a *cube*?! Anyway, the thing will launch sometime in the middle of this year, so keep your eyes and ears open!

sCENEs

This January, geeks from all over the world gathered in Las Vegas to gawk at all the cool gadgetry and techno-wizardry showcased at the 2006 CES—the Consumer Electronics Show. The show saw the unveiling of new Blu-Ray and HD-DVD Players and the fabled "iPod killers" among other things, but what fun are those? Here's what we found *really* second-look-worthy.



The Gathering (Mind)Storm

Lego, known for introducing kids to the complex science of robotics, showed off its new Mindstorms

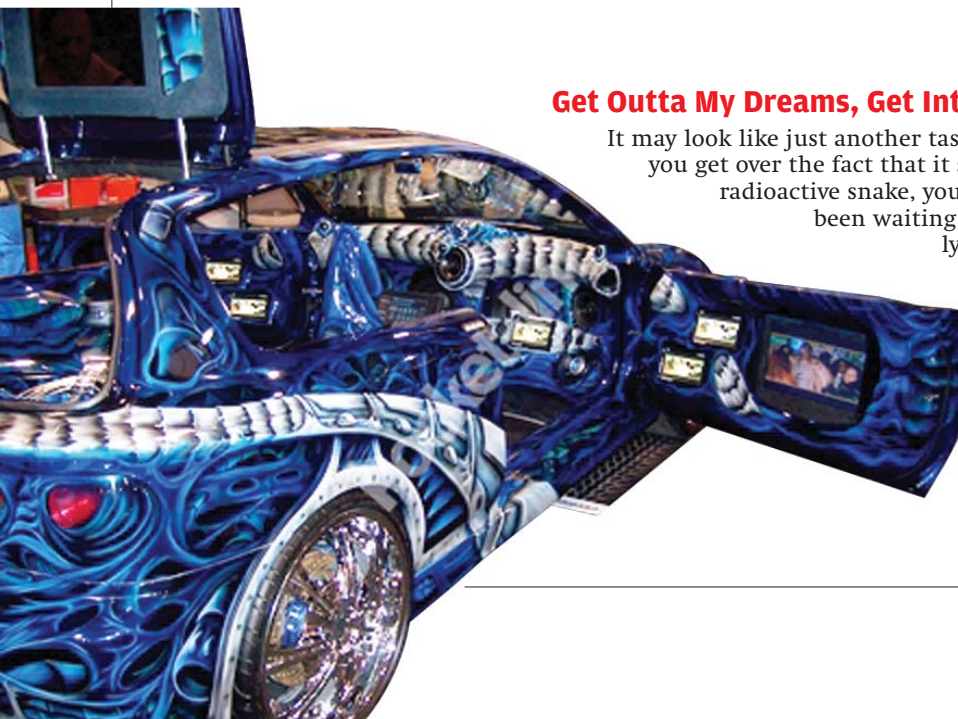
NXT—a microprocessor "brick" that can be programmed via a PC or Mac. It comes with precision servo motors that ensure your robots move gracefully. It supports Bluetooth, so it can also be controlled from a smartphone. Throw in an ultrasonic eye to help it see, and touch sensors to let it feel its way around, and you have something that will have everyone complaining, "Why didn't we have this in our day?"

Get Outta My Dreams, Get Into My Car

It may look like just another tastelessly "tricked-out" Honda Civic, but once you get over the fact that it seems to have been vomited out by a radioactive snake, you realise that this is what all gamers have been waiting for. Prefer racing cars on your PSP to actually driving them? Well now, with a Wi-Fi connection and a PSP, you can control every-

thing about this vehicle, including driving it down streets to spook onlookers.

The car has been modified by Metro Electronics, who are specialists in car audio. The thing isn't for sale and never will be—it's a concept car. But if it were, it would cost about \$250,000 (Rs 1.1 crore), according to a spokesman's estimate.





Imprints On Souls

Sure, paper's all right when you want to print any old thing, but what about when you want to get your message out with a little more pizzazz? The VersaLASER uses two lasers to engrave, cut or burn your graphics onto anything from steel plates to wood. Made by Universal Laser Systems, it comes for a cool \$10,000 (Rs 4.5 lakh).

Starry, Starry Night

How long has it been since you visited a planetarium? A year? Two? Celestron's SkyScout, which landed the "Best of Innovations" award by the Consumer Electronics Association, will probably increase that gap a lot more. It's the new handheld "celestial viewing device"—point it at any visible object in the sky, and it belts out running commentary about it. You can also ask it to find a celestial object for you, and it will use helpful little arrows to pinpoint it!



Ghostly Music

Yamaha didn't disappoint their fans: they came up with a wacky new instrument—a piano that can play tunes all by itself. It comes with five songs recorded by Elton John, though you can also favour another artist to suit your musical tastes. It costs \$70,000 (Rs 32 lakh), it's big, it's red, and it comes with Elton John's autograph, too!



Umbrella, Will It Rain Today?

Ambient Devices unveiled a mystical umbrella this time at CES—its handle glows blue when there's a likelihood of rain. It connects to Ambient's own network to figure out its location, and then downloads the weather forecast for that region. So now when you're wondering whether to carry your umbrella with you or not, all you need to do is ask it!

Ambient also introduced their Magic Mirror, which looks like any old mirror from far—but come closer and it displays the time, weather forecast, stock quotes, and other information.



36 Quantum Cryptography



44 The Ghosh in the machine



50 Behind The Scenes

Digital Passion

Fuelling the pursuit of technology knowledge

Lead Feature

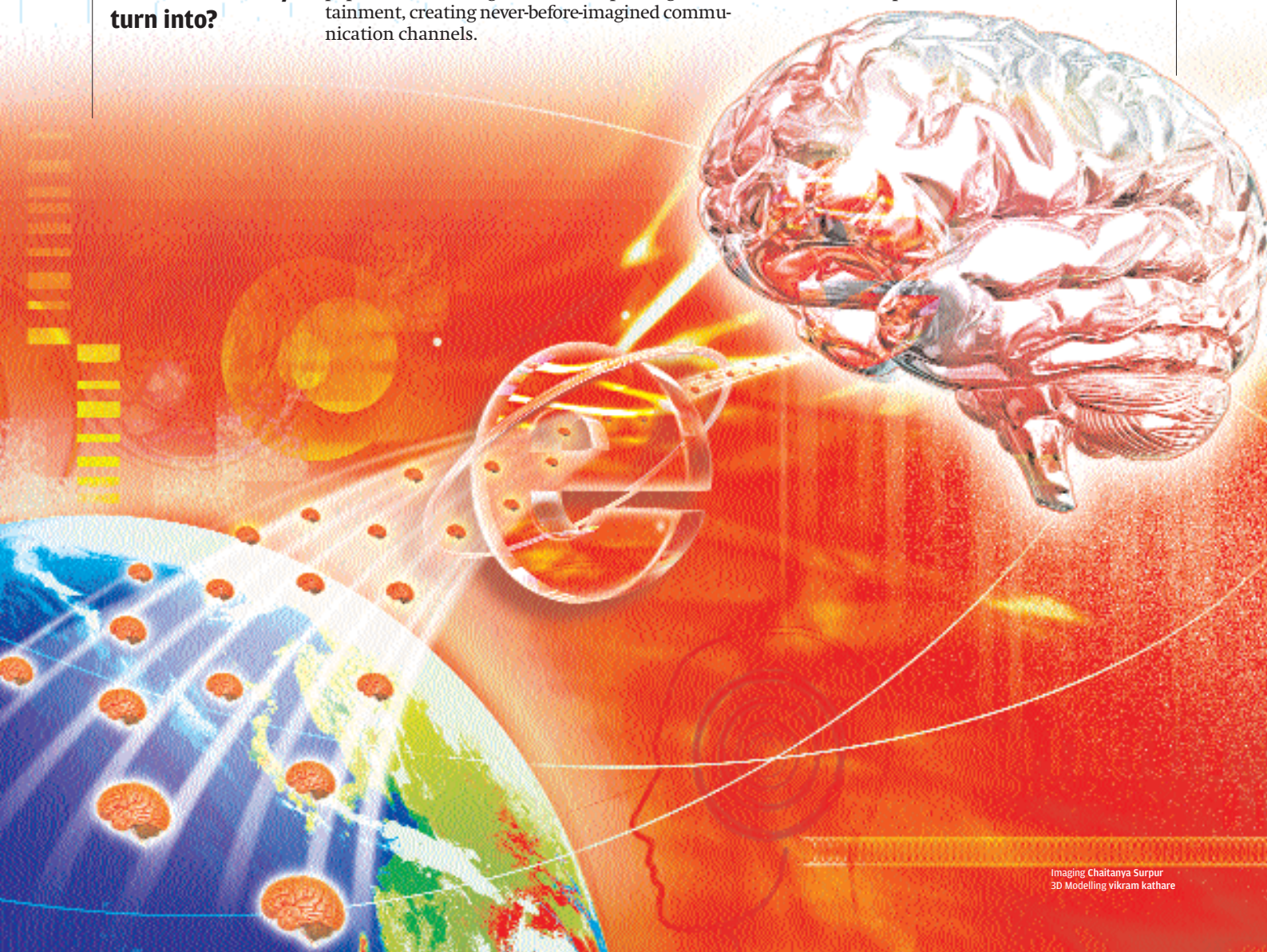
Overbr^{ain}in!

The Internet is becoming more than an information repository. What will it eventually turn into?

Ram Mohan Rao

Information rules like never before. And the Internet is the enabler of today's information; it's like the nervous system of a world in the information age. It is seething with information of all types, in many languages, at many levels, serving the needs of diverse populations, driving business, dispensing entertainment, creating never-before-imagined communication channels.

There is a remarkable similarity—and one that cannot be taken lightly—between an individual brain and the Internet. The brain has a memory system that allows it to store and retrieve information; the Internet is a massive shared memory, with information being stored and retrieved all the time. Then, there is the network effect: in the brain, it is the *network* of neurons, with all their connections, that gives rise to its intelligence. The Internet, too, depends on the network effect for



its power—the utility of the network increases exponentially as more users are added. Third, both the brain and the Internet have their information protocols.

In an information-driven world, then, think of many intelligent units connected together, with the Internet as the medium. The information is the thought process. The individual nodes—whether mechanical or human—are the neurons. It's a huge collective brain, no less. But it's a brain in its infancy: it doesn't think for itself, it doesn't learn, it doesn't solve problems... What several theoreticians have proposed is that the next logical step in the development of the Internet is of it becoming a Global Brain or Overbrain.

On the Internet, each node—an applet, site, server, or whatever—is dumb in itself, but the Net as a whole can exhibit intelligent behaviour. The concept of an Overbrain is based on a few broad ideas: first, that inter-human communication, being as advanced as it is now, is sufficient to make

for a global superorganism. Second, that the Overbrain will be more powerful and knowledgeable than individual humans or machines. And third, that it would be something of a grid, with humans as well as machines as nodes on it.

It's a very natural idea, actually. People are already acting as nodes. Take Google Answers, for example. You pay and get your query answered—it doesn't matter to you whether your query has been answered by a bot or a human. The expert who answers your question is a node. You play a game on the Web with a stranger. You're both nodes. You make a Wikipedia entry. You're a node.

In what follows, we introduce what people have been calling the Global Brain, which we call the Overbrain. We look at mechanisms by which the Internet could become more intelligent, and ask what could happen thereafter.

Similar Sites, Similar People

Today's Internet has the trappings of a brain, but not those of a particularly smart one. Think about Amazon's recommendation system. When you buy a book or CD, you're prompted with something like "People who bought this item also bought..." This could happen all over the Net! But as of now, when you visit a Web page, you aren't presented with something like "People who visited this page also visited..."

There could also be links from a page you visited to pages that "similar" people also visited. Web sites such as del.icio.us introduce the concept of "similar people."

These concepts—of similar sites and similar people—are important. Treating both sites and people as nodes, we're talking here about clustering. Many aver that in a biological brain, it is clus-

The Web will learn from—and adapt to—the behaviour and needs of its users. No human knowledge "injected" into the Web need ever be lost any more

ters of neurons that make up ideas and concepts. Fragmented sets of information points just don't cut it: there needs to be organisation. In practical terms, an organised Web would be much more useful than the fragmented collection it is today. And in theoretical terms, an Overbrain would need to be organised if it is to learn and think.

A Learning Web

The human brain implements what is known as "associative learning." Neurons that are activated one after the other have the connection strength between them increased. Similarly, concepts that are more frequently used together become more closely interlinked. For example, if you frequently think about "mouse" and "key-board" at the same time, the two become more tightly integrated together—possibly under a new heading, such as "input devices."

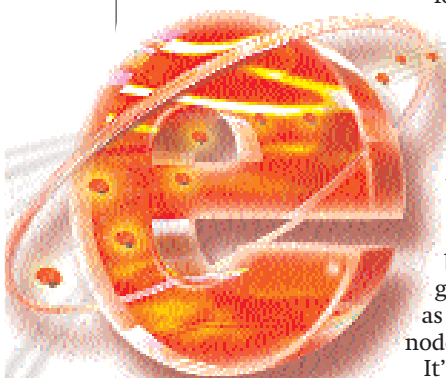
Applying this to the Web would mean increasing the linkage between two pages depending on how close they are in terms of usage. So if a user views page A and then page B, the linkage between them can be increased, or a new link can be placed between them. If the user views page C after that, there will also be a link from A to C. Now, these links will need a minimum strength in order to be displayed, and so some links could die out altogether. Of course, there's the issue of unrelated sites being visited in succession, but that's addressed by the fact that the links between such sites will ultimately die out.

An example of this is at the Global Brain Group (GBG), associated with the Principia Cybernetica Project (PCP). J Bollen, working with F Heylighen, chair of the GBG and AI researcher at the Free University of Brussels, has put up a smart server that does just this. The result is "a dynamic system of strengthening and weakening links between different pages."

Bollen continues, "These ever-shifting hyperlinks bear a remarkable resemblance to connections that grow and fade in a human brain. On the Principia Cybernetica Web (the Web site of the PCP; <http://pespmc1.vub.ac.be>), algorithms will reinforce popular links... It's the first step on the road to the global brain."

The important thing about this is that the Web is learning from—and adapting to—the behaviour and needs of its users. No human knowledge "injected" into the Web need ever be lost any more. Distant documents could get linked together. Clusters of ideas could form. Take the example of gorillas and conservation; one site could be that of Greenpeace, which mentions gorillas in passing. The other site could be about the social behaviour of gorillas. Mere keyword matching would not link these two as similar; if the Web could learn, it would eventually tie them together.

What if the Web were intelligent enough to learn concepts on its own? The Overbrain could do data mining, where interesting patterns are observed from a mass of data and presented to the user. If a sufficient number of people who consume a certain kind of food (purchased on the Web, of course) develop a vitamin deficiency, the Overbrain could mark this up as a syndrome, and warn buyers of that food about the deficiency.



A Thinking Web

Here, we look at the idea of software agents on the Web, or Web agents. We've mentioned agents in *The Lizard Of Oz, Digit*, January 2006. The Web has thus far been more or less a passive information repository—when you're looking for information, it's *you* that has to be intelligent; *you* need to supply the search engine with an intelligent query.

Enter the agent. Much like a bat that detects its prey by spreading echo waves and having the prey reflect them, you could let a Web agent “fan out” over the Web and have it return relevant information to you. Say you're looking for whether gorillas are apes; also, you want to list out what people think are the smartest animals, and whether gorillas figure in that list or not. This is a complex query, so you “weight” your search term: you give “gorillas” and “smart” a high weightage, “apes” and “animals” a lower weightage, and “list” the lowest weightage.

Your agent could make copies of itself and actually have a presence all over the Web, not knowing exactly what it's looking for, and come up with the best matches. For example, it might spot that a particular domain has interesting information on animal taxonomy and try and apply “ape” in that domain.

Just like regular software agents, Web agents could learn about their users. And agents could learn from each other, exchanging experiences!

This is not the space to analyse what human thinking consists in, but introspection will reveal that when we think about something—as when we try and solve a problem—we start off at a point, and fan our thoughts out to all the concepts and ideas we have. Our thoughts play the role of agents; the concepts and ideas play the role of the clusters we talked about earlier.

Thinking and learning could be combined. The knowledge an agent gains in its journeys across the Web could be passed on to the Web itself. And the learning Web would, in return, facilitate the agents' job.

For all this to happen, data on the Web needs to be structured better than it is now. It could happen in many ways, but one set of technologies waiting to take off comprise the Semantic Web (www.semanticweb.org), a vision of Sir Tim Berners-Lee, the inventor of the WWW. Berners-Lee, in *Weaving The Web*, 1999, said: “If HTML and the Web made all the online documents look like one huge book, (Semantic Web technologies) will make all the data in the world look like one huge database.” Documents on the Semantic Web are much more easily processed by machines than HTML documents are, and Web agents are more easily imaginable on something like the Semantic Web.

Eliciting Information

Now here's where it gets really interesting. The Overbrain could very well become a repository of all the world's information. Someone high up at Google did recently say that the company would index all the world's information by 2050—whether he said it in jest or not is not the point; the fact is, we're certainly moving in that direction. But our point is also that this repository would be a *smart* repository in a number of ways:



On the PCP Web, algorithms will reinforce popular links, while rarely used links will diminish and die. It's the first step on the road to the global brain

Johan Bollen
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- ☑ It would be “in touch” with human experts, who would be nodes on it.
- ☑ It would maintain the consistency of its knowledge, implying that, while being distributed, there would be a centralised check. Think of your brain: you cannot possibly harbour two entirely contradictory beliefs!
- ☑ To this end, it would elicit information from the experts and from its users.

To elucidate, interaction with the Overbrain need not be one-sided—after all, in the case of our brains, information flows both ways. The Overbrain could keep a check on the consistency of the knowledge it contained; for example, it should not be the case that one node says the plural of “virus” is “viruses,” with another saying it's “virii.” This is a silly example, but suppose the Overbrain detected such a mismatch. It could consult an expert in biology (or software) and ask for his opinion—using which it would update the data in the mistaken node. This is a massive step: if this were to actually come to pass, the Internet would be 100 per cent reliable, and this alone would make it a hundred times more useful.

The natural question now is, how would an expert be located? We can envisage a scenario in which experts register themselves with the system. Every individual has knowledge unique to him, and that others can benefit from. As more and more people plug in to the Overbrain, we'd have what we like to call a techno-ideosphere. Each one of us would have some form of identification. The domain and level of knowledge that one has to offer would be encoded in the identification, and there could be a sort of “global login” procedure. We can then envisage a system that offers knowledge in return for knowledge—so you log in as a gardening expert, and take help on subjects such as sports. We can also think of knowledge flowing between experts, resulting in debates and discussions that will enrich the usefulness of the Overbrain.

Memes On The Internet

Memes are ideas that can be passed on to others. In *The Meme Machine*, Susan Blackmore, psychologist and memeticist, has suggested that humans are basically carriers for memes—just like anthropologist Desmond Morris suggested that we are merely carriers for genes. An example of a meme is Darwin's idea that we descended from the apes. The Internet is, as we can all see, amazingly suited to the propagation of memes. Many memes start off at blogs. An example of a meme currently doing the rounds is the anti-evolutionary idea of Intelligent Design (for more information, visit www.arn.org). This is a good example because a few months ago, nobody had heard about it, and all of a sudden, the Web is abuzz with the phrase.

How do memes tie in with what we've been saying about the Overbrain? Well, the Overbrain can be a formal facilitator of meme exchange. Take the case of Idea-X, at <http://idea-x.net>. From phptr.com, “Idea-X is an online idea exchange. Participants can either propose ideas or ask for ideas to address a specific problem. A suite of tools allows people to see how other members rate each of the ideas and the people proposing them, and to keep track of the best ideas on the site.”

Where Idea-X lacks is that anyone can look at the ideas on the site and use them any way they want. A more rigid system is offered by PLX Systems, “an online market for intellectual property.” At www.pl-x.com, you can buy and sell registered intellectual property. This may sound too commercial, and against the nature of the Internet, but it’s an example of the “expert login” principle we talked about—you give something, you take something.

Idea-X and PL-X are isolated examples; the Overbrain will likely incorporate a vast meme-exchange network. On the Overbrain, memes could sprout all on their own: they could be inferred or detected from documents! They will spread, they will morph, they will be downloaded and uploaded, they will die out—all based on how useful or interesting they are. It happens on today’s Internet, but slowly. Think about the way a good idea hits *your* brain, activating several concepts and eliciting several responses at the speed of thought. And extend that to an Overbrain, with its rich hyperlinks, its agents buzzing around, its analysis of its own knowledge and ideas!

Giving It The Push

There is an important issue we’ve glossed over. There are certain things the Overbrain would not be able to imbibe all on its own; it would need an initial push—notably in the direction of traditional artificial intelligence. It would have to have some of its links structured as relationships; and it would need to have common sense. Here, we can mention that projects such as *Cyc* (Refer *The Lizard Of Oz, Digit*, January 2006) are aiming to build a system that encompasses all of human common sense, for example, that if your father has three sons, you have two brothers. Such a common-sense system could be integrated into the Overbrain.

On the point of relationships, the Overbrain should know, taking the example of a cat, that:

1. It is a *member of* the mammal class and of the animal class
2. It *has* feet and a tail
3. It is a pet

And so on. Reciprocally, “tail” should be linked as a *member of* animal bodies; “pet” should *include* cats, dogs, and so forth. Semantic Web technologies, which we mentioned earlier, are ideally suited to the marking up of information on the Web in this way.

Today, we interact with the Internet by way of keywords. This is akin to the age of machine language in programming.

Humans and the Overbrain will interact in natural language, which



If we don’t want to be dictated to, we’ll have to be very careful about controlling our dependence, and the evolution of the Global Brain

Daniel C. Dennett
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means that the Overbrain will need to have natural language understanding capabilities. We can also think about more sophisticated interfaces, and about downloading stuff directly to our brain. But such a tight integration of man and machine is the subject of another discussion altogether!

Beyond A Repository

At this point, we’re talking about an entity that has all the knowledge humans have, that can think, learn and adapt, that “knows what it knows”, and that can easily communicate with us. What sphere of life would be spared from such an entity? Wherever there’s knowledge, information, or intelligence involved, it would be a two-way flow between humans and the Overbrain. Would there be any need for schools and teachers any more? What would universities and think-tanks become but “Overbrain exchange centres”? Would there be a need for non-fiction books any more?

We learn from blogger Stephen Pratt (<http://stephenpratt.com>) that Heylighen said in 2000: “Whatever problem people have, any kind of question to which they want an answer, it will all become easier because the Web will self-organise and adapt to what people expect of it.” And Heylighen reportedly went on to say that all the technology required to enable an Overbrain is already there—and that “the main stumbling block is the difficulty of convincing the powers behind the Internet to adopt the common protocols that will be needed.”

Being a repository of information is all fine. The Internet already is one. The interesting possibilities arise when the Overbrain begins analysing its knowledge. When it begins forming its own beliefs. When it becomes ... aware?

Whether or not the Overbrain will develop consciousness, we’ll leave to the philosophers. But when the Overbrain has beliefs and opinions of its own, it will take on more *control*. And why not? What sophisticated system in the world today doesn’t depend on computers for its functioning? And when it comes to an Overbrain, who will not hand over control to something that knows much more than what an individual brain can ever know?

Beyond students and learning and books, think of governments, or corporations, and how they might turn to the Overbrain for help in decision making. Would not an overbrain dictate policies? Would it not run *everything*?

A Skynet?

Skynet is the fictional computer network in the *The Terminator* series of movies that turns against mankind. If we’re saying we’ll hand control over to an Overbrain, won’t it take over us? Let’s start with a warning from someone in the know. Daniel Dennett is a professional philosopher, and the author of several mind-body-brain bestsellers. From Pratt’s site, Dennett says, “The global communication network is already capable of complex behaviour that defies the efforts of human experts to comprehend. And what you can’t understand, you can’t control. We’ve already made ourselves so dependent on the network that we cannot afford not to provide it with the energy and maintenance it needs.” Dennett goes on, “If we don’t want to be dictat-

ed to, we'll have to be very careful about controlling our dependence, and its evolution."

It seems that it's a foregone conclusion for Dennett that the Overbrain will happen. But then again, think of a now-famous article called *Why The Future Doesn't Need Us*, in Wired Magazine in 2000: it was written by Bill Joy, co-founder of Sun Microsystems. He began with, "Our most powerful 21st-century technologies—robotics, genetic engineering, and nanotech—are threatening to make humans an endangered species."

When it comes to speculation, the people up there seem as confused as the rest of us: some predict doomsday, while others speak blithely of better times to come. Regarding Dennett's comments, we agree that beyond a certain point we will not be able to understand the workings of the Overbrain, but we ask, isn't the dynamics of the Internet already beyond our comprehension? And as for control and dependence, what would happen to the civilised world if all computers were unplugged?

Coming back to Skynet, what if someone proposed to the Overbrain that it had the power to take over mankind? Wouldn't it turn evil at that point? Well, the Overbrain would be a reflection of the majority—one idea injected somewhere will not make a difference if the majority thinks (and hopes!) otherwise. But in any case, a doomsday question belongs in the realm of science fiction, where the Overbrain is assumed to have a consciousness and self-awareness and so on: we're assuming it *won't*. Think of the analogy with the human brain: *you* have a personality, your brain doesn't. Similarly, humanity might have a collective personality, but its Brain will not. Probably. Maybe. We hope so...

An important point we've just raised is that it's the view of the majority that will be reflected by the Overbrain. Your current brain state is an "average" of all the thoughts working away inside it; similarly, the Overbrain will reflect the "average" or "most common" view. Is that depressing? Will individualism die? The point here is that this is not radically different from the situation today. It's the majority that dictates that most people should do a 9 to 5 job, and we accept it as the norm. It's the majority that likes Microsoft and Windows, and that's why most of us use it!

As for individuality, it will always stand to be rewarded—recall what we said about the spreading of memes. If you have a great idea—a worthy meme—it will spread faster, more easily than it can today. Our view is that the Overbrain is something that will enrich our lives, much like the Internet has.

As a final point, one can always "opt out" of the Overbrain. Just because Google has a personalised search feature doesn't mean you have to use it—you can provide your login information only when you want to. Of course, opting out of the overbrain could be a hundred times worse than the situation today when your modem gives up on you, but at least you'll have the choice!

A Natural Progression

Heylighen said about the Global Brain that it could happen within "just five years." But he said that in 2000.

AI researchers are notorious for being overly optimistic and often hopelessly wrong with their predictions. We must distinguish well between fact and speculation. What we know for sure is that the Overbrain is the direct evolution of the Internet; that the need for communication can only increase; the need for coping with info overload can only increase; and that the need for sharing human intelligence can only increase.

Whether all this will indeed lead to an Overbrain, we can't say. But it's an idea. A meme, we should say. ■

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Your secret's safe with Quantum Cryptography

Nimish Chandiramani

This is a story about people with secrets. Through the ages, they have been plagued by the incurable tendency of other people to try whatever they can to find out what these secrets are. We are, after all, but human. Keeping everything hush-hush has been a constant battle of wits. Cryptography—the art of writing messages so that only the intended recipient can understand it—was soon born.

Alice, Bob... Aur Woh

We can't journey into the world of secret communication without some seasoned players, so we've recruited Alice and Bob—two veterans of the game who have been secretly chatting with each other under the watchful eyes of cryptography researchers for years. The villain here is played by Eve, whose sole purpose is to eavesdrop on Alice and Bob's conversation without them finding out.

Nyah Nyah Nyah!

To foil Eve's dastardly schemes, Alice and Bob turn to mathematics. Before sending out her message, Alice gives it to an *encryption* program, which performs its mathematical magic on it, turning an otherwise readable *plaintext* message into what looks like gibberish, or *ciphertext*. Bob then uses a *decryption* program to turn that gibberish back into plaintext. Of course, Eve's case isn't entirely hopeless. If she manages to get her hands on how either Alice's

encryption or Bob's decryption program works, she's back in the game—all she has to do is reverse-engineer their methods.

So plain old gibberish-ing won't work for Alice and Bob—they need a *key* to lock their message. The key is basically a string of numbers that the encryption program uses when it's turning messages into ciphertext. All mathematical operations rest on this key, and so even though Eve can still access the ciphertext *and* know exactly how the encryption and decryption programs work, she is still baffled without it.

Protect The Key, You Must

Even though Alice and Bob have keys that they can now mockingly wave in Eve's face, the big question for Alice is, "If I write my message using a key, how do I send the key to Bob so he can read it?" Obviously, sharing the key should be done in complete secret, but they really can't plan for Eve's creativity when it comes to new and improved methods to eavesdrop.

The first idea is the Public key and Private Key system. This way, Alice and Bob don't need to hunt for secure ways to distribute their keys. Instead, they each have a *Private Key* which they use to decrypt messages, and a *Public Key* which is used to encrypt the message. Think of it as a box with two keys—anyone with the public key can lock it, but only the person with the private key can unlock it. The public key/private key system relies on the fact that there are some mathematical operations that take longer to undo than do—for example, you could go all calc-happy and keep multiplying numbers to get a 1000-digit number, but factorising that number into all the numbers you started with is a pain even for supercomputers! Say Alice wants to send a message to Bob:

Alice: Oi! I need to send you something. Give me your public key.

Bob: Sure; it's 12I94732

Eve [with evil grin]: Hee hee, now I know the key!

Alice will then use Bob's public key to encrypt her message and send it to Bob.

Alice: "S*&(?)"{\?0%&

Bob: Aha! Now that the message has been locked with *my* public key, I can use my own *private* key to unlock it.

Today's computers would take ages to crack an encrypted message, but what about tomorrow's computers?

Eve: What the...? I can't decrypt this!

Another method is the terribly secret *One-Time Pad* (OTP). The OTP is a random key, the same length as the message, which is applied once, and only once. Theoretically, there is no way of deciphering an OTP-encrypted message without knowing the pad itself. There is, of course, the fact that this pad has to be guarded with great care. Out of sheer paranoia, this pad also needs to be: (a) completely random so that Eve can't detect patterns and figure out the pad herself, and (b) used only once, so it's useless even if Eve finds it out—keeping her safely out of the conversation.

Sitting Pretty?

It all sounds really safe, doesn't it? To be dead honest, cryptography as it exists today is quite sufficient for our causes. Breaking into current systems is quite tough; that people have enough faith to carry out billions of dollars worth of transactions over the Internet speaks for itself.

But safety now doesn't mean safety forever. True, today's computers would take ages to crack an encrypted message (see box *Attack!*), but what about tomorrow's computers? Quantum computing is going to turn complex mathematics into child's play. Think of the 1000-digit number problem—a quantum computer would actually be able to give *all* the factors to the number in a single shot!

The first to succumb will be the public key/private key system. Nobody can deny that there is a relationship between the public and private keys of a person—after all, it is because of this relationship that enables people to tell whether a message is meant for them. It still hasn't been proven that Eve can't 'pick' Alice's lock just by knowing her public key and using math to figure out the private key. As computers become more powerful, scientists will have to keep refining this technique to keep private keys private.

The One-time pad is quite secure—in fact, it has been proven that even if Eve had infinite computing power, she wouldn't be able to break it. The trouble is, the key needs to be shared in a way that is *perfectly secure*, otherwise the entire effort is pointless.

Everything else aside, there is still no way to tell if your communication line is being monitored or not. So apart from guarding against the computers of the future, we need to figure out a way to prevent eavesdroppers getting out ciphertext at all.

Thankfully, before quantum computing arrives and exposes all our embarrassing secrets, there will be *Quantum Cryptography*, which will ensure that the Alices and Bobs of the future can still chat without Eve ruining the party.

Light In Shining Armour

Rather than using mathematics to encrypt messages, scientists have been working on quantum cryptography, which uses the quantum-physical properties of light to aid in securing communications. The purpose of quantum cryptography is to provide a secure way to transfer keys between Alice and Bob without Eve being able to find them out.

Attack!

There are many methods that dedicated hackers can use to eavesdrop on your information.

The *Brute-Force Attack* is the most basic of them all. It runs through all possible combinations of numbers and letters to figure out the key to decrypt messages. Naturally, it's really inefficient and can actually take thousands of years to crack today's codes.

In a *Man-in-the-middle Attack*, the hacker intercepts messages between both parties, maybe even sending out wrong information to them without being detected. For example, in the public/private key system, Eve could intercept a message from Alice to Bob which contains Alice's public key. She could then send Bob her own public key. Bob would then use *Eve's* public key to send his secret message to who he thinks is Alice, but in reality, he's making it for Eve! Eve could then use Alice's public key to encrypt anything she wants Bob to read. Through all this, Alice and Bob don't know that Eve is listening in, so they think that they are talking to each other.

Jargon Buster

Encryption: Performing mathematical operations on messages to hide their content.

Decryption: The reverse process of encryption—getting the original message back from the encrypted version.

Plaintext: A clear, un-encrypted message, like “Hello.”

Cipher: An algorithm used to encrypt

plaintext and convert it into seemingly nonsensical *ciphertext*.

Key: A string of numbers that is given to the cipher along with the message. The cipher’s resulting output depends on the key.

Ciphertext: The final result of plaintext fed to the cipher along with the key, for example, æW æÇ^Ä.

Light behaves strangely in the sub-atomic world. Sometimes it’s a wave, and sometimes it’s a stream of particles called photons. It is these photons that will be used to carry our data in the future.

In the world of classical physics, a bit is a bit. It’s *tangible*—either as an electrical signal in a wire or the intensity of a light beam in a fibre-optic cable. And because it’s tangible, it can be measured. Measuring something like the electrical current through a wire doesn’t affect the current itself—it just passes through unchanged. This means that someone could tap a communication line without either party ever finding out.

In the quantum world, though, things are a little different. There are properties of photons that are tied together so tightly that measuring one property will cause a change in the others, disturbing the entire system. This way, any attempt to eavesdrop would easily be detected.

The Crazy, Crazy Quantum World

Suppose you have a friend behind you. You can’t see him, so he could be standing, sitting, running, jumping, anything. Of course, you could just turn around and take a look, but do you really know what he was doing the instant before you looked? If you lived in the sub-atomic world, he was actually doing *everything* till you observed him; once seen, he settled into the state you saw him in. What state? Well, you could see him in any state at all—it’s random. Why random? Ah, well, Einstein himself couldn’t figure it out in his lifetime, so don’t expect an explanation from us.

Even though quantum randomness gives scientists sleepless nights, it actually helps cryptographers sleep better. The problem with the one-time pad is that in computers, nothing is really random—programs are written that *simulate* randomness, but are actually predictable.

Er...

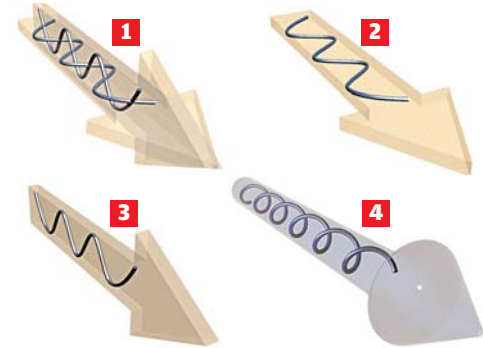
At the core of quantum physics is the concept of *Uncertainty*. Two properties of a photon can be related in such a way that the more certain you get about one, the less certain you get about another. *Heisenberg’s Uncertainty Principle* describes the relationship between the position and momentum of particles. Basically, if you know the position of a photon, you will never know its momentum unless you are prepared to give up your knowledge of its position.

Stand Me Up, Lie Me Down, Turn Me Around

The property of photons that is used in quantum cryptography is *Polarisation*. Light waves move in different *planes*—vertical, horizontal, and everything in between. *Linear Polarisation* is the act of selecting only those light waves that move in one particular plane. Light could either be vertically or horizontally polarised. There is also the special case of polarisation called *Circular Polarisation*, where the light wave is made to move in a circular fashion rather than the classical up-and-down in one plane. Circular polarisation could happen in the right or left direction. Each photon carries with it information about its polarisation. Linear and circular polarisations are bound by uncertainty—your measurement of linear polarisation will destroy your measurement of circular polarisation, and vice versa.

Much to our relief, quantum cryptography can be understood even if you don’t understand polarisation.

Polarising Light



1. Light travels in all planes. 2. Horizontal Polarisation—isolating light that travels horizontally
3. Vertical Polarisation 4. Circular polarisation

Setting The Scene—Artur Ekert’s Card Tricks

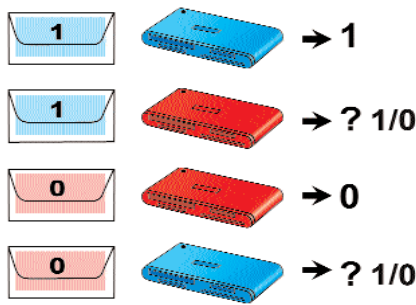
In 1991, Artur Ekert came up with an interesting analogy to help us lesser mortals understand quantum cryptography.

Suppose we have a whole bunch of sealed envelopes with either blue or red cards in them. Each card has either 0 or 1 written on it. Blue cards can only be read using a special “blue machine,” and red cards can only be read using a “red machine.” If we put a blue card in a red machine, the machine will throw out a random guess as to whether there was a 0 or 1 written on the card, and vice versa.

The colour of the card (the photon) represents its polarisation—let’s say red for linear and blue for circular. A 0 on a red card would mean that the photon is horizontally polarised, and a 1 would mean it is vertically polarised. Similarly, a 0 on a blue card would mean left-circular polarisation and a 1 would mean right-circular polarisation.

Somewhere in these observations comes the whole craziness of the quantum world. If we put an envelope with a blue card that says “1” into

Ekert's Card Tricks



The Blue machine only understands blue cards—it makes a random guess with Red. Ditto the Red machine—it only understands red cards

the red machine, it will make a guess at what's on the card—say 0. But now, if this card is put back into the red machine, it will still read 0. But wasn't it supposed to give a random answer each time? What has happened is that the card has now taken on the properties of a red card with 0 written on it, and its ever being blue with 1 is now a distant memory. This is a manifestation of uncertainty: observing a card as blue automatically destroys the assumption that it was ever red, and vice versa.

Quantum Weirdness And Spooky Happenings

If you thought all this was bizarre, read on to find out what even the greatest of scientists call weird. It's called *Quantum Entanglement*, and had been billed by Einstein himself as "spooky."

The concept of quantum entanglement talks about photons that are so closely related that it's impossible to describe one without describing the other, no matter how far apart they are. And the really spooky part is that any attempt to measure the properties of one photon will immediately affect the other one—photons talking to each other in no time at all.

Coming back to the cards: suppose, now, that we hand one sealed envelope each to Alice and Bob. We find that if both of them use the same colour machine, their outputs are the same—either both 0 or both 1. But if they use different machines, the outputs may or may not be the same. But how? There is no way for both of them to know what colour card they are receiving. Let's try to guess what the card could be before either of them checks it in their respective machines. What if both cards were blue? That would surely get them the same answer if they both put the cards in their blue machines, but that doesn't mean that they would get the same if they put the card in their red machines. By similar reasoning, we can also discount that they were both red.

What if both were different colours? Even that wouldn't explain why both in a blue machine would give the same outcome—what happened to the logic of having random outcomes when the colours didn't match? The

only option left is that there was no colour or data on those cards before they were put in the machine.

What we didn't tell you is that the cards we gave Alice and Bob were really entangled—so if Alice's blue machine said that the card has 1 written on it, then *both* cards are blue with 1 written on it. Now, if Bob puts the card in his blue machine, it will (correctly) tell him that its value is 1, but if he puts it in his red machine, he will get either a 0 or 1 randomly—just as expected.

Why Won't You Talk To Me?

Finally, now, we are in a position to discuss how keys are exchanged in the quantum cryptography scenario.

We have our old favourites—Alice, Bob and Eve; joining them is a source of entangled photons—let's call him Sam. We can use the card analogy here as well.

Sam sends out pairs of entangled cards to both Alice and Bob, who decide, independently of each other, which machine to use to read it. Suppose Alice starts with her red machine and gets a reading of 0, and Bob uses his blue machine and gets the same reading. This goes on for a long while. After a set number of such trials, they start to compare notes. They discuss the measurements (but not the data they got from them) over a public channel—something like:

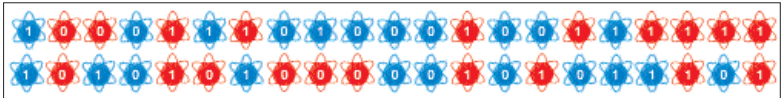
Alice: "I used my red machine."

Bob: "Hey so did I!"

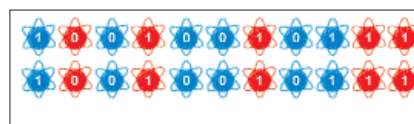
OR, Bob: "Nah, I used blue."

This continues for all the cards that were sent out by Sam. Finally, they keep only the data they got from those cards for which they made the same measurement, and discard the rest. Thanks to Quantum Weirdness, they know that they now have the same string of data. To make doubly sure, though, they share some of this data, again over the public channel, to see if

Getting The Key

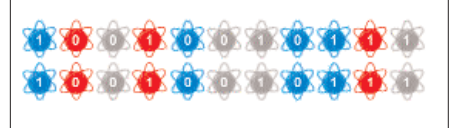


The measurements that Alice (top row) and Bob (bottom row) make. They get the same result when they make the same measurement.



They pick random results and compare them to see if there were errors

Now that they've made their measurements, they only keep the results where they both used the same machine



Finally, the Key!

everything matches. Once this is verified, this shared data is then discarded. What they are left with is a shorter string of data that only the two of them know—the Key!

But wait, didn't we say that Alice and Bob discuss all this in *public*? What happened about all that secrecy that was promised? Let's take a look at what information Eve has if she was listening in on all of this (and of course she was):

1. She knows which machines both Alice and Bob used, and
2. She knows a few selected bits of the key.

Our response:

1. So what if she knows which machines were used? She doesn't know what answers the machines gave Alice and Bob, does she?
2. Again, so what? Remember, the bits that are discussed in public are discarded and are no longer part of the key.

Take That, Eve!

Our concern here is a man-in-the-middle attack (see box *Attack!*). How can Eve find out the key without both Alice and Bob knowing she's there? She needs to send them her own cards, and make sure that both Alice and Bob get the result that Eve wants them to. Suppose she sends out a pair of cards with 1 on them, and both Alice and Bob use the blue machine (Eve can find this out because Alice and Bob are going to discuss what machines they used). So because both Alice and Bob used the blue machine, they got 1 as their output—exactly what Eve wanted. If this continued this way, Alice and Bob would end up agreeing on a key that Eve created. Bye bye, privacy!

Isn't there a possibility that Alice and Bob could end up using different machines? Their output wouldn't tally, and Eve can't know what the outcome will be. True, but these results are discarded anyway—they didn't use the same machine! So all Eve needs to do is skip this part in the key she's trying to send Alice and Bob, and see what they got for the next bit. She'd still know the part of the key that *has* been agreed upon, so she's still a threat. Could it be that a quantum cryptography system is not immune to attacks?

Wait! What if Eve sent out blue cards, and Alice and Bob used their *red* machines? Would they get the same result then? Now this is where Eve's dirty little secret is revealed—you see, she didn't send out entangled cards—just identical cards to fool Alice and Bob into believing they are entangled. So there's a 50 per cent chance that even though Alice and Bob use the same machine, they will get different answers. When they do their final check and reveal parts of the key to each other, they are going to end up in a situation where they both used red, but got different answers. "Something's wrong!" they'd say, "let's shut up for now." And that's the end of Eve's game.

Reality Check

The concept of quantum cryptography has been around since the late 1970s, and working systems have been set up in educational institutions as early as the 90s. However, it will take

a while before we see it in more places. For one thing, quantum cryptography is possible only over fiber-optic lines. Before we see it in our daily lives, we still need to see a world where fiber-optics has penetrated to a much greater degree. Entanglement is a fun concept to read about, but it is a *really* difficult thing to do, and even once it's done, controlling that entanglement is possible only over small distances—around 60 km or so.

Most importantly, quantum cryptography hasn't evolved to suit a network scenario—point-to-point connections are all there is. Even so, there are real-life applications where it is already starting to become practical.

My Preciousssss...

The infrastructure for a quantum cryptography system is a massive expense; whose information could possibly be *so* secret that they wouldn't mind shelling out obscene amounts of money to protect it? Why, the military, of course! We don't want our national secrets being bandied about on public forums, do we?

Think: ten years from now, you're making a withdrawal from your ATM. You need to punch in your PIN, don't you? Would you really be comfortable with the idea that there could be a hacker tapping the line, waiting to make his quantum computer decipher your PIN?

Companies such as New York's MagiQ and Geneva's idQuantique are already providing quantum cryptography solutions to banks and the military—obviously the first people who would want such ironclad protection. Research is underway to use quantum cryptography in communication with satellites as well.

Billions of dollars are spent in credit card transactions on the Internet today. Sure, the cryptography used is really secure—the time it would take to decrypt your credit card number is much, much longer than the actual validity of your card. For example, it is estimated that it would take around a thousand years to break current techniques using today's computers. Who cares, then, if you're going to be long gone before your credit card number is found out? But then again, there is the looming threat of quantum computers. As we move on, and quantum cryptography can be used on the Internet, we should see an almost total stop to things like credit-card theft; almost every financial transaction could be carried out over the Net without any worries.

Another Reality Check

Quantum cryptography may be the ultimate safeguard against eavesdroppers—even eavesdroppers with quantum computers. There is still the matter of encryption on your hard drive—if a hacker with a quantum computer gets into your system, nothing says that he can't break any kind of file encryption you have used. Secrets—especially military secrets—need to be kept hidden for decades, and we still need a system for encryption in storage media before everything is truly under lock and key. ☒

nimish_chandiramani@thinkdigit.com

You know Windows Media Player 9 and 10 can rip Audio CDs to MP3, but can you rip using Windows Media Player 8?

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Rip Audio CDs To MP3 In Windows Media Player 8



LAST MONTH'S CHALLENGE



Take a Crack and Win

SAMS Teach Yourself TCP/IP

By Joe Casad

Published by Pearson Education Delhi

LAST MONTH'S WINNER

Nipun Agarwal
New Delhi - 110065

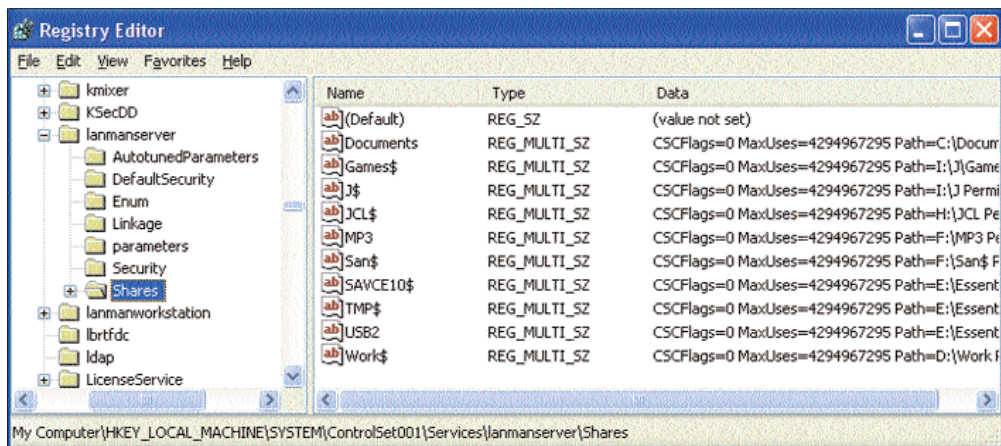
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Save and restore share names and permissions on a Windows 2000/XP/2003 computer

1. Open the Registry editor. From the HKEY_LOCAL_MACHINE subtree, go to the following key:
2. Save or export that Registry key.
3. Type in a new file name (a file extension is not necessary), and then save the file to a floppy.
4. Reinstall Windows and run the Registry Editor.
5. Restore or import the Registry key. You'll need to type in the path and file
6. Restart your PC.

You can always restore your previous configuration by pressing [F8] at bootup and selecting the "Last known good configuration" option. ☑



REWIND



STOP



FAST FORWARD

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The Ghosh in the Machine

Meet a man whose passion for technology drives him to do things most would consider strange

Robert Sovereign-Smith and Nimesh Chandiramani

Technology elicits different reactions from people. Most would consider it just another part of our lives; however, there are those that live in utter fear of it, simply because they do not understand IT and are averse to learning from scratch. Then there are people like Anindo Ghosh, who seem to live and breathe technology.

As employees of *Digit*, we often find that everyone else around us away from work is

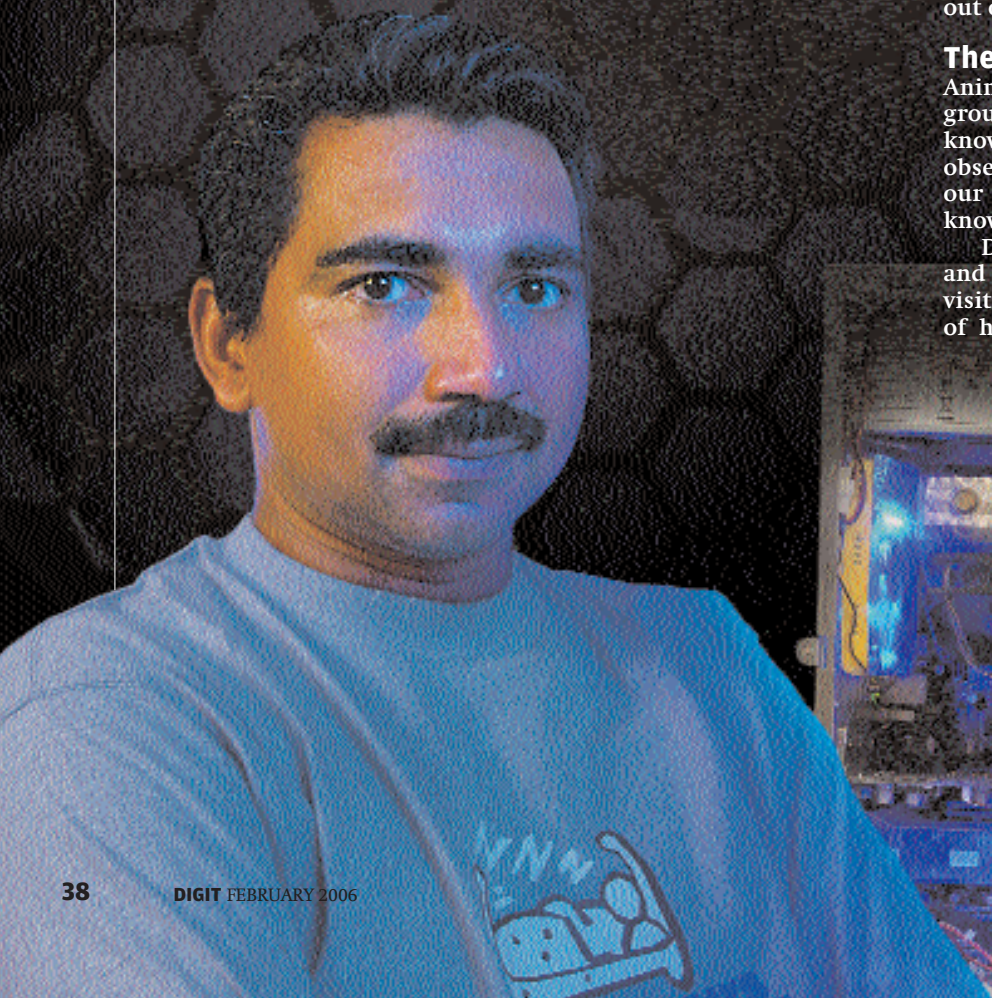
just not “into” technology as we are, and are often bored of our constant chatter about the latest hardware and technologies. Thus, it’s no surprise that in the rare occasions when we chance upon a like-minded stranger who loves machines more than anything else, we often end up yakking away excitedly while the world around us looks on in bewilderment.

We met Anindo purely by chance. He’s the CTO of Agilisys (www.agilisys.co.uk), a leading technology and business process services provider in the UK and India. With his corporate profile, most would not think of Anindo as a hardcore technology enthusiast, and it’s a good thing we met him away from work and out of his business suit!

The Man

Anindo is 35 years old, used to be an underground street car racer in Delhi, is a well-known photographer and has an absolute obsession with technology. That would be our one-line description of him, though we know it doesn’t do justice.

Do a Google search for “Anindo Ghosh” and you will find his photography online; visit his house and you will see the geek side of him. Like any other geek, Anindo loves



games. "I'm not into blood and gore filled FPS games. Give me a simulation game any day," says Anindo. It is strategy over shoot-'em-ups, and the stack of games lying near his computer tells the story, most notably *The Sims 2*, with all expansion packs!

We noticed that all the software and games lying about were originals, and asked Anindo about piracy. "Perhaps your readers might be a little surprised to know that I buy all my software, but that's just how I like it," says Anindo. Perhaps more Indians need to work for a software technology and services company, in order to better understand how and why piracy is evil.

"You don't buy any FPS games?" we asked. "I just bought *Quake 4*, but all that blood and gore is not for me, so I promptly gave it to my brother," says Anindo, and goes on to describe the gore in *Quake 4* with a nauseated expression. Oh well, you can't win them all!

Apart from being a noted photographer, Anindo has been involved in technology consultancy and writing for several years. He has been a consultant for over a decade in the field of network design and implementation, and was the brains behind India's first ever cyber café and Web telecast a decade ago. His technology addiction forces him to buy games and gadgets by the dozen, and is something his friends and better half have given up trying to explain.

His Machine

Eager to get a peek inside his machine, which has a glass face and some funky UV laser lights that gave his room an eerie blue tinge, we final-



A WorldSpace Radio with a data connection also lets you use the data port for upto 128 Kbps of receiving incoming PC data

ly popped open the cabinet and Anindo gave us his now (in)famous "two dollar tour"!

The first thing you notice is the lighting, which is tastefully placed and not too in-your-face. Looking past the lights, we caught our first glimpse of something unique—a very strange-looking heat sink and cooling solution. "That's an Asetek VapoChill Micro Extreme CPU cooling solution that I got from the UK," says Anindo, reading the questions forming in our minds.

Asetek is a leading company in vapour and liquid cooling solutions in the UK, you can visit their site, www.asetek.com, for more information and products available.



A nifty portable media player—Anindo's Archos AV300 Mobile DV recorder

Anindo's technology addiction forces him to buy games and gadgets by the dozen, and is something his friends and better half have given up trying to explain.

Anindo loves his VapoChill cooling system and says it's helped him keep CPU temperatures lower by almost 20 degrees, especially when he's overclocking.

Overclocking? The word brings excitement to us Digit guys, and we immediately demanded to know more. "What have you overclocked, and by how much?" we demanded.

"The motherboard I have, the ASUS P5WD2 Premium, is a dream to overclock with. I mounted a dual-core Intel Pentium Extreme Edition 840, 3 GHz CPU on the board and managed to overclock it to 3.9 GHz. It ran perfectly for over two hours before it blue-screened. After a lot of

trial and error, I discovered that 3.3 GHz was the ideal speed at which performance was improved and temperature could be controlled



The Epson PictureMate is Anindo's printer of choice!

easily," says Anindo. Not bad, we thought: a 10 per cent increase in clock speeds is an admirable feat indeed.

We noticed that there were two RAM strips, both covered with copper heat sinks. When we asked about that, Anindo said, "Those are 1 GB, 667 MHz Transcend sticks—I used to have four of them, totalling 4 GB, but I didn't notice any performance improvement. Instead, all I noticed was an increase in power usage and heat generation!"

Since we knew he had played *Quake 4*, we looked at his graphics card next. Though we could tell immediately that it was an ATi X-800, we were more interested in the weird-looking contraption that was slotted in place below it. Anindo told us it was a Cyclone dual-fan cooler that he had picked up for his overclocked graphics card.

"While overclocking the graphics card I noticed the temperatures soaring to 90 or 95 degrees Celsius, and the peak rated operating temperature is 110 to 120 degrees! I knew I needed separate cooling for the graphics card as well, so I bought this Cyclone cooler," says Anindo. The only problem he had with it was that it occupied two PCI slots.

He also has a heat sink-cooler combination with dual fans and temperature controlled cool-

The Garmin GPSmap 60c is a compact GPS device



ing for his Hitachi D722 250 GB SATA II hard drive. Needless to say, here's one person who takes system cooling seriously! He also plans to cut a blowhole into the top of his cabinet and add a fan there to control airflow even better.

His Advice

We asked Anindo what advice he'd like to give other technology enthusiasts from around the country.

His response was, "Look, when it comes to hardware and components, it's pretty much what you can afford that decides what you buy. If you have the money to splurge, all you have to do is find a place to buy the latest offerings. Yes, I know even that can be a challenging task at times, but it's simply a question of a little extra time and money. I've found that if you're willing to pay premium, you will always find a dealer that's willing to 'import' things for you—whether from a different city or from abroad.



The 8-megapixel SLR-type Minolta DiMAGE A200 with 7x optical zoom

"The sins I find people committing are with regards to their cabinets, power supplies and, more often than not, absolutely no planning for airflow. Cabinets need to be spacious and airy, and you need to calculate how much power your system will use before buying a power supply.

"Planned airflow is something no one can buy, and you'll have to concentrate on this yourself. Make sure all your wires are out of the way, preferably located high up near the CD/DVD-ROM drive, which doesn't need that much cooling anyway.



An i-mate Pocket PC keeps Anindo connected while on the move

Cabinets need to be spacious and airy, and you need to calculate how much power your system will use. Planned airflow is something no one can "buy" for you.

"I also found that using rounded wires was a lot better for airflow than standard IDE cables. Then there's the need to actually map the airflow in the system and pinpoint how you can get cooled air to flow towards all the components that need it, such as the CPU, graphics card and hard disks. Also remember to make sure that any lighting you put into the cabinet uses as little power as possible and generates minimum heat."

His Plans

People like Anindo are rarely satisfied with the technology they possess. As a result, it's time to go shopping at least once a year for a new system. Being an ATi fan, he wants to buy a CrossFire-ready motherboard in the future, and says that he will stick to Intel processors—as always.

He also mentioned that he would love to try liquid cooling solutions using water and liquid nitrogen as well! "If the current PC is a beast, the next one will be the king of beasts!" avers Anindo.

With better dual core CPUs and multi-CPU boards on the horizon, coupled with dual-graphics card solutions and the availability of the more eccentric RAM-drives to replace primary hard drives, you can see the gleam in Anindo's eyes when he thinks of his next system. His only response to our simple question, "Why?" was a smile and the clichéd one-liner "I have a need, the need for speed!" Clichéd it may have been, but it was a succinct and honest reply...



Unlike most of us Indians, Anindo buys only legal games and software

Whatever the new technology, a handful of enthusiasts will always be ready to buy, even if the performance gains don't merit the increased price. It's people like Anindo, the early adopters of new technology, who drive demand in the market.

It's rare that we come across people as enthusiastic as (or more than) those of us at Digit, and we'll make sure we tell you every time we do. Stay tuned to this space to read any follow-ups on people passionate about technology. If you have done something as crazy, write into us—we'd love to have a chat! ■

robert_smith@thinkdigit.com
nimish_chandiramani@thinkdigit.com



The PC

ASUS P5WD2 Premium motherboard - Rs 17,000
Intel Pentium EE 840 3 Gig (OCd to 3.3) - Rs 15,000
ATi X800 + Cyclone cooler - Rs 28,000
2 GB 667 MHz Transcend RAM - Approx Rs 12,000
Hitachi D722 250 Gig SATA II HDD - Rs 6,000
Asetek Vapochill Micro Extreme - Bought from the UK
UV lasers, light accoutrements - Bought from the UK
Antec Super Lanboy cabinet - Rs 5,500
Antec Truepower 2.0 550 watt power supply - Approx Rs 6000
APC BackUPS RS1000 - Rs 1,000

The Entertaible puts a 21st-century spin on the traditional board game

The brainchild of a Philips research team located in Eindhoven in the Netherlands, the Entertaible is a table-top gaming platform that infuses electronics into board games, such as Monopoly or Backgammon. It consists of a 30-inch horizontal LCD table-top unit with a touch screen, and is designed to work in any lighting conditions.

The Entertaible is called so because of the social “entertainment” experience it offers, and its “table-top” form factor. It incorporates the use of traditional board game features such as dice and pawns, and has “multi-object position detection,” meaning that it simultaneously detects the location of several different objects, including fingers, on the screen. So you can play, for example, Monopoly, with the Entertaible detecting the positions of various players’ fingers as well as those of the game pieces.

The capabilities and features of this innovation could bring true interactivity to multi-player board and electronic games. For example, you could use a portion of the touch-screen to allow private tactical information to be shown only to specific players.

Electronic gaming is generally considered isolating; the Entertaible provides an opportunity for social interaction. You can store many different board games, have several game levels, save a game in mid-play, and have rules explained as you play through a game!

Showcased at the Consumer Electronics Show 2006, the Entertaible is currently in the prototype stage. It will be first targeted at restaurants, pubs, bars and casinos. The good folks at Philips may come up with a home version if the present model is a success, and we’re keeping our fingers crossed!



The Entertaible



Behind The Scenes

A lot of us have heard of OpenGL and DirectX—especially those of us into 3D gaming. But what do they do?

Robert Sovereign-Smith

Most of us have our favourites when it comes to games. A few of us are crazy enough to spend big bucks on oodles of RAM and a top-of-the-line graphics card, just to be able to play 3D games—others are content with *Solitaire*! If *Solitaire* is your thing, we should warn you that this article could induce sleep; those of you who swear by games such as *FarCry*, *Doom 3*, *Half-Life 2* and *Call Of Duty 2* will find the following informative.

Think about your favourite 3D game. Now think about all the complexities that go into

programming it. First and foremost, you have textures and shadows and lights and water effects and... the list is endless. Games today come up with breathtaking scenery, and this is expected of any big title worth its salt. Add to this mix the even more complex physical properties that each object needs to exhibit while you're playing the game, and you have a maddening amount of mathematics, coding and rendering that the graphics chip and CPU have to do in parallel.

Today, only very small bits of scenery are two-dimensional images, if at all. Most of the awe-inspiring fantasy worlds you see in games are made up and rendered on the fly by your graphics subsystem.



Let's not even get into the whole computation of AI for enemies and friends—how they move, whether they duck and hide or attack, and about the best path they need to take to be able to attack you! The fact is, games are as complex as programs come today, and are becoming real resource hogs—you need tons of hard disk space, memory, and a 3 GHz+ machine to play the latest titles, not to mention a graphics card that costs in excess of Rs 20,000.

Now imagine if game developers had to code for each and every command, each and every difficulty level, and for each video resolution and effect! And not just code for each operating system, but also for each graphics chipset model! We hope you get the picture: think mass suicides in Silicon Valley and game companies...

APIs

Thankfully, a software coder's life is made easier with the help of Application Programming Interfaces (APIs), which standardise commands that are sent to the hardware and software so a coder just needs to know what command his software is supposed to send, regardless of the make of hardware and software being used.

Think of it as a translator: you want to say something in English to people who only speak a certain dialect of Bengali. The translator is well versed in all dialects of Bengali, and can translate anything you say to any Bengali-speaking person from any part of the globe! That's sort of what an API does—it helps programmers code in "English," instead of in a different language, depending on the thousands of permutations of hardware and software across the globe.

To elucidate, an API enables both software or game developers as well as hardware manufacturers to standardise the commands, code and drivers, so that life is easier for everyone. Now APIs are used everywhere, even between an OS and a software program. For example, you need to have the Windows API to be able to make a software program for the Windows operating system!

However, this article is not about APIs in general. We're focusing only on the APIs that are used for 3D graphics—whether in graphics software such as Maya or 3ds Max, or 3D games such as *Doom 3*, *F.E.A.R.* and *Half-Life 2*.

A 3D Graphics API consists of everything that comes between a game and the system hardware. This includes the input software, the OS libraries and even the hardware device drivers. So, a 3D API would take commands from a game or graphics program (programmed using that same API, of course) and translate its input requirements and output data so that the hardware (graphics card, CPU, etc.) can understand what's needed of them.

Those who have heard of 3D Graphics APIs will have definitely heard of OpenGL and DirectX (or Direct3D, more appropriately). Let's dig a little deeper into how it all began.

OpenGL

OpenGL started off as Iris GL, a graphics API developed by Silicon Graphics Incorporated (SGI), for the UNIX operating system. In 1992, SGI opened up the API for the public, so people could program using this API, and renamed it OpenGL.

Perhaps the best feature of OpenGL is the way it seamlessly integrates with almost any operating system—from UNIX to Linux, the BSDs, and all versions of Windows.

Remember, OpenGL gets its name from "Open Standard Graphics Library," and is *not* open source software as many people mistakenly believe. Open Standard means that anyone can license the API and program for it, but no one is allowed to modify it—a stark contrast with Open Source software norms!

OpenGL is developed and maintained under the governance of an Architectural Review Board (ARB) that is made up of companies such as 3DLabs, Apple, ATI, Dell, IBM, Intel, nVidia, SGI and Sun Microsystems. There are more members, but without any voting rights to steer the development of the API, so we won't name them here. Visit www.opengl.org for more information on the partners, and even the minutes of every meeting that has been held thus far!

Perhaps the best feature of OpenGL is the way it seamlessly integrates with almost any operating system—from UNIX to Linux, the BSDs, and all versions of Windows. There's also an official open source implementation of OpenGL called the Sample Implementation (SI), which is completely free for anyone developing open source software or games. Read more about this at www.sgi.com/products/software/opengl/license.html.

OpenGL began, and still is, a low-level graphics library specification. It deals with primitive geometry such as lines, points, simple polygons, images, and bitmaps, to create larger 2D or 3D rendered images. Using OpenGL, programmers can easily use simple commands to render these polygons and shapes by the graphics card's frame buffer. The API was designed to be used with the C and C++ languages, but currently also supports Java, FORTRAN, Ada, and more. For those who don't know what all this is about, don't worry, just take a look at the box *Jargon Buster* to get quick meanings for all the jargon you'll encounter here.

Since OpenGL is independent of the operating system's windowing system, it can be easily used on any platform. A windowing system is a component of the OS that handles things such as window management, colour mapping, and event handling. So basically, OpenGL works on any platform because it interfaces with the windowing system of, say, Windows, or X11 for Linux, and passes commands on to the windowing system. It does the same with the system event handler and the input mechanism. All this results in simple and short codes that are easy to troubleshoot and maintain or change.

Direct3D

Most of you have probably never heard of Direct3D, though a lot of you will have heard about Microsoft's DirectX. DirectX is basically an API suite that contains libraries for audio, input and graphics, all rolled into one. Comparing OpenGL to DirectX, however, is like comparing water to oil, so we'll only talk about the graphics API within DirectX, which is called Direct3D.

The history behind Direct3D is interesting. Back in the days of Windows 95, Microsoft noticed that all game APIs were written with the older Disk Operating System (DOS) in mind. Microsoft wanted to increase native support for games within Windows, which was easier said than done. Windows has many abstraction layers, and

this caused problems for coders trying to write graphics software and games. Coding was a nightmare.

Sometime in 1995, Microsoft took note of a small UK-based firm called RenderMorphics that was developing a 3D rendering software called Reality Lab. Once Microsoft was convinced that Reality Lab was just what it needed, it acquired RenderMorphics in February. Reality Lab went on to be renamed Direct3D, and thus began Microsoft's very own 3D API.

To say the beginning was rocky would be an understatement. Since OpenGL was already established by now, was way easier to program for, and was much better and less buggy, it's no surprise that Direct3D got a lot of flak in the beginning. Microsoft's first version of DirectX was numbered 1.0, and contained Direct3D and DirectDraw, for 3D and 2D rendering respectively. However, the release was buggy, slow, and still a lot harder to code for than OpenGL.

It was only with DirectX 7.0 that Microsoft's API was embraced wholeheartedly by game developers. With DirectX 8 and beyond, Microsoft rectified earlier irritations and introduced a set of precompiled code classes that they called Common Files. What these files did was hide all the complicated commands—such as code for listing the capabilities of the hardware. For example, even drawing something as simple as an animated 3D circle can involve hundreds (or even thousands) of lines of coding, even after using older APIs. The Common Files helped by reducing the lines of code required for such common tasks.

The biggest advantage of the DirectX suite of APIs is its seamless integration into all Microsoft operating systems and other platforms such as Xbox. Another advantage is the fact that it's a suite of APIs, so game programmers working with DirectX APIs can code their games for both audio and 3D graphics.

Most importantly, however, is the way DirectX is standardising everything and levelling the playing field for graphics cards manufacturers and game developers alike. Some time ago, you couldn't play most games on lower-end systems, but

now, thanks to DirectX, you are able to play the latest games on any DirectX compliant card—the resolutions and imaging settings will have to be set lower on lower-end cards, but at least you *can* play the games!

Another great innovation brought about by the DirectX family of APIs is the Unified Shader Structure. What this does is let graphics chipsets use the same transistor to do either pixel shading or vertex shading, depending on the API's needs. This definitely gives DirectX (or Direct3D, rather) a definite advantage over OpenGL!

The drawbacks to the DirectX APIs are also the areas in which OpenGL excels.

To begin with, DirectX is not "open" in any way, so any change in the API comes solely at the discretion of Microsoft. Though not necessarily a bad thing, you do have to wait for Microsoft to implement suggested changes, even if a lot of developers are quite capable of doing so on their own.

Although the Windows OS is by far the most popular across the globe, ruling the roost with sheer numbers, not all developers want to limit their games to a single OS. id Software, for example, has always built games that run on just about any OS, and thus have always been in the OpenGL camp. Direct3D also needs a lot more coding than OpenGL from game developers. However, a lot of improvements in the DirectX API as well as the enhanced integration with the operating system mean that more and more games are being made for Windows only. And let's face it: Microsoft's dominance in the OS business doesn't hurt—a lot of game developers today do not consider investing time and money in coding for other OSes a viable option, and are quite happy targeting the masses by coding only for Windows using DirectX/Direct3D.

Platforms

As with most competing technologies, both OpenGL and DirectX have their own fan followings. A lot of open source developers cannot think of using anything but OpenGL, while most game developers seem to be using DirectX as the API of choice. So long as there is a choice of operating

General Purpose Graphics Processors

Graphics Processing Units (GPUs) are very powerful processors, and nothing illustrates this more than the fact that they outdo today's best CPUs from behemoths such as AMD and Intel on a flop-by-flop comparison. In fact, the latest from the nVidia and ATi stables, the 7800 and X1800 respectively, actually severely hammer the fastest CPUs out there—a 7800 GTX achieves about 200 billion floating point operations (flops) a second, while a 3 GHz dual-core Pentium performs just about 20 billion.

It was only a matter of time before someone put 2 and 2 together and arrived at 22! The latest hype of General Purpose GPUs (GPGPUs) is derived from the thought that, "If I have this monster of a GPU, and I'm not playing games all the time, why can't the GPU assist the CPU and make my computer even faster than it already is?"

A valid point! However, it's the architecture of a GPU that lets it down when it comes to general purpose computing. Basically, the example below will illustrate how a GPU is used:

CPU: "Calculate this!"

GPU: "Sir yes sir!"

CPU: "What if I take that number I gave you 1.4 billionths of a second ago and raise it to the power of this new number... what do you think?"

GPU: "Huh?"

Basically, a GPU is optimised for point-to-point operations, and they have very low memory caches, simply because games and 3D rendering just does not require anything more.

So will the GPU ever replace the CPU? Nope! But nothing stops a GPU from helping out now and then!

A CPU can process a couple of threads in parallel, which is contrasted by the latest GPUs, which have 24 pipelines, essentially meaning that they can process 24 threads at a time. If, somehow, we could link the CPU and GPU directly with a PCI-Express communication bridge, and if the CPU and API software could decide whether or not a certain task was better suited for the GPU, you could actually get better performance.

This is the concept of GPGPU implementation, and work is on in full swing using both OpenGL as well as DirectX to try and achieve this. Getting into the nitty-gritty of the changes in the architecture for both CPUs and GPUs as well as the APIs is beyond the scope of this article, but if you're really interested in learning a lot more about this concept, visit www.gpgpu.org for more information!

Jargon Buster

Graphics library: A graphics library is a collection of functions that control the output video. These functions can be linked into a program or games to achieve tasks such as initialising video memory, displaying images on the screen, changing colours, etc.

Frame buffer: A frame buffer is the part of memory on a display card that stores the information about what should be displayed on the screen. For example, after rendering video from a game, the graphics card stores every rendered screen in the frame buffer, which is then sent to the monitor or display device when requested. Think of it like and Outbox in your mail client, where mails are stored while they are in the process of being sent!

System event handler: An event handler is a command that's associated with an object. Say, for example, a button on a Web page: you specify a code that basically says, "Do X when this button is clicked". This code is the event handler. Within your system, the same principle is applied for all commands received by a program, the operating system or even the hardware.

Rendering: Rendering is simply the changing of digital information to a human viewable output. Everything from the text you type to the games you play needs to be rendered from ones and zeroes to viewable content. The word rendering, however, is mostly used when describing 3D applications or games, where it means putting together a lot of images to form video.

Pixel shading: Current generation graphics cards have programmable

pixel shaders that enable you to calculate the exact colour and texture effect for every pixel displayed on a screen. Even at a resolution of 1024x768 @ 60 Hz, that's 4,71,85,920 computations per second! Using an example from nVidia's site: "Characters now have facial hair and blemishes, golf balls have dimples, a red chair gains a subtle leather look, and wood exhibits texture and grain."

Vertex shading: A vertex is a point on a shape where edges meet. So, a triangle has three vertices—each corner. A vertex shader applies affects and textures to a variety of predefined vertices in an image. This is what helps you get realistic looking waves, because they're not just lines or curves coming towards you, but also have a 3D depth. This is also how games can use lighting effects to determine how to distort a shadow of a moving object, or show the distortion of light coming from around a corner!

Graphics engine: This is a software that takes commands from a program or game and creates images and text, which are then channelled to the graphics driver and hardware.

Raster images: This is an image that's made up of a collection of dots. Bitmap images are raster images and are meant to be displayed on a screen.

Vector images: A vector image is an image that's produced on-the-fly by using mathematical formulas to draw it. Vector images can be scaled up or down without losing any quality, because a graphics engine always has to create the image before being able to display it.

systems, one can be sure that both will continue to co-exist. What might change is the popularity of each API.

Since DirectX is a Microsoft-proprietary technology, a lot of game developers have to use OpenGL in some form or the other in order to be able to release games for the console segment, specifically Sony's PlayStation series. However, with the increase in popularity of the Microsoft Xbox series, game developers can now choose to stick to DirectX and have a presence in the console market.

The future, in terms of PC gaming, might pose problems for OpenGL though. Especially important is the soon-to-be-released next generation OS from Microsoft - Vista. The problem is that Vista uses a 3D graphics engine even to display its regular Desktop windows and a lot of other enhanced effects. It's obvious that Vista, by default, will use DirectX to do its work for it. Actually, Microsoft is calling the new graphics engine Windows Graphics Foundation (WGF), which will perhaps just be DirectX 9.0c renamed. However, there are also claims that Vista will finally ship with WGF 2.0, or DirectX 10 if you like!

Now comes the terrible news for OpenGL: Vista will supposedly run Microsoft's own version of OpenGL (1.4 is the popular speculation) in a layer above WGF (or DirectX). So experts are expecting at least a 50 per cent drop in performance with games written for OpenGL. Though none of this is confirmed, because Vista still hasn't been released yet, it might see game developers such as id Software being forced to code their games on DirectX as well as OpenGL.

Vistas Of Tomorrow

You should have gotten a good idea about what 3D APIs are and a basic idea about how they work. The main concern for most developers today is whether their OpenGL skills will cease to be an

Vista is capable of unloading everything that isn't necessary while playing a game, which includes many services and even the desktop environment

asset in the near future. Alas, this is a question that can only be answered once Vista is released later this year.

Another interesting development is that Microsoft wants to improve the way games are installed on PCs. If we go by popular online hearsay, the WGF will enable us to install games and start playing them in a matter of seconds, as compared to the many minutes it takes to just install games, even on the highest-end PCs. And, unlike with Windows XP, Vista will pass on graphics processing to the GPU directly, without ever disturbing the CPU.

Also, Vista is capable of unloading everything that isn't necessary while playing a game, which includes many services and even the desktop environment—like end-tasking Explorer.exe and then launching a game to prevent wastage of resources. Vista is also touted to come with support for Pixel and Vertex Shader 4.0 (we're barely past version 2.0 currently) so as to future-proof its graphics API.

Whatever the outcome of the API wars, as PCs become more powerful, games get heavier than ever, and our expectations from them increase, some changes will be required within APIs as well as the OSes. Vista seems to bring about such changes, and its WGF standard might change the way all programs are developed, not just games! This is because if Vista becomes the OS of choice (which it probably will), the interface design of every single program will have to be done using raster images instead of the vector images used today! This means that designing even a simple program tomorrow might be more akin to what game designers do today! Whatever the outcome, be prepared for a lot better looking programs, games, and the look-and-feel of Windows as a whole. ■

robert_smith@thinkdigit.com

Logitech Cordless Desktop S510 Media Remote

Deepak Dhingra

Comfort, Class and Calibre are three Cs we associate with home entertainment. Any product with these has us coveting the testing chair. The product we had with us this time around promised to turn a home PC into an entertainment tool. Working from the comfort of your couch can actually become a reality now.

Take a sleek keyboard and mouse, with a great remote control, erase all the wires and voila, you have the Logitech Cordless Desktop S510 Media Remote. Thirty glorious days on the settee follow...

Day 1: Setting it all up

It's easy to use such cordless gadgets because they are linked to the PC via the USB mini-receiver that plugs into any free USB port through a receiver stand. Connect the stand to a USB port on the PC, load batteries into the three input devices, load the software and press connect buttons on each device and you're there!

Day 2: A touch of class

The three products are elegantly designed and the cordless desktop felt just right in my living room. With a black and gunmetal finish, the trio made a great style statement.

I could customise the various settings for the keyboard, mouse and remote using the Logitech SetPoint utility.

Day 5: Get 'Set' software

I used the SetPoint software to customise all programmable buttons on the keyboard (four keys) and on the remote (three keys). The MediaLife software is a miniature version of the Media Center application that provides quick access to all digital media—photos, music and videos—in a single, intuitive interface. I was set to enjoy my tryst with cordless entertainment!

Day 10: Putting my feet up

Distance from my PC is easily navigated with the gadgets I have. I sat a few feet away from my PC, and launched the MediaLife software using the remote. I could watch slideshows of pictures, zoom in or out of them, rotate images, play music and videos—all from the comfort of my sofa, by using the remote! Also, the 4-way roller on the remote facilitates navigation between menus.

Day 15: Keying them in

The S510 keyboard is a time saver—I can launch office

applications directly, and run commands such as Print and Save from independent keys. That's not all—most functions on the remote, such as multimedia control and zoom are present on the keyboard too, which means I can use one or the other. I can also use the zoom button to control the zoom level in Word and PDF documents, etc., and also get them back to 100 percent zoom directly by a press of a button.

Day 20: Pointer control

The mouse is designed such that both right and left-handed users can claim comfort. Though it does not provide many shortcut keys like some of the other high-end mice we have seen, you do get all the basic functions. I could easily scroll through long documents, and even sideways using the tilt wheel. The settings to control these features, the speed, etc. are easily customised through the SetPoint software.

Day 25: Wish List

I discovered that the on-screen display indicates whenever you use buttons such as Caps lock, Num lock unlike the LEDs on old keyboards. This is inconvenient because I have to use the features on the screen to be able to judge the status of simple functions that an LED on an old keyboard would have provided at a glance.

Day 30: Bidding Adieu

Time to pack up and let my armchair companion go. It's been a great time working wire-free for the past few days and it will be tough going back to my old wired keyboard and mouse. Working, at a distance, with such handy gadgets, sure made life easier ... ☑

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AUGUST

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60 Extra Large,
Please



72 Roast 'em
Good



80 Clicks 'n' Keys

Digital Tools

Technology For Personal And SoHo Productivity

Enhance

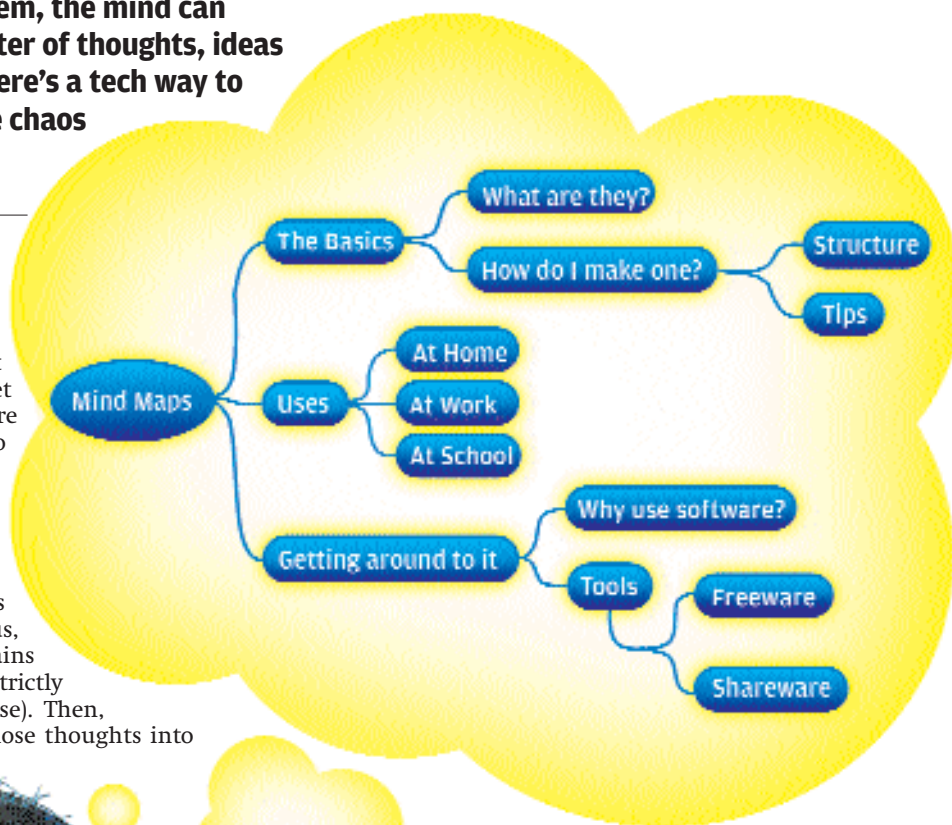
Core Dump

Faced with a new problem, the mind can become a hopeless clutter of thoughts, ideas and random rubbish. Here's a tech way to bring some order to the chaos

Nimish Chandiramani

Think about how your brain gets clogged when you're halfway into a problem. You know enough to keep you going; but you don't know enough to be able to get to the answer right away. There are so many different aspects to think of, so many different lines of thought!

Sure, there are a blessed few whose brains are built like libraries—everything is classified, categorised, and put in its place just so. For the rest of us, well, we'd like to see our brains splattered in front of us (in a strictly non-mafia-hit sense, of course). Then, perhaps, we could sort all those thoughts into



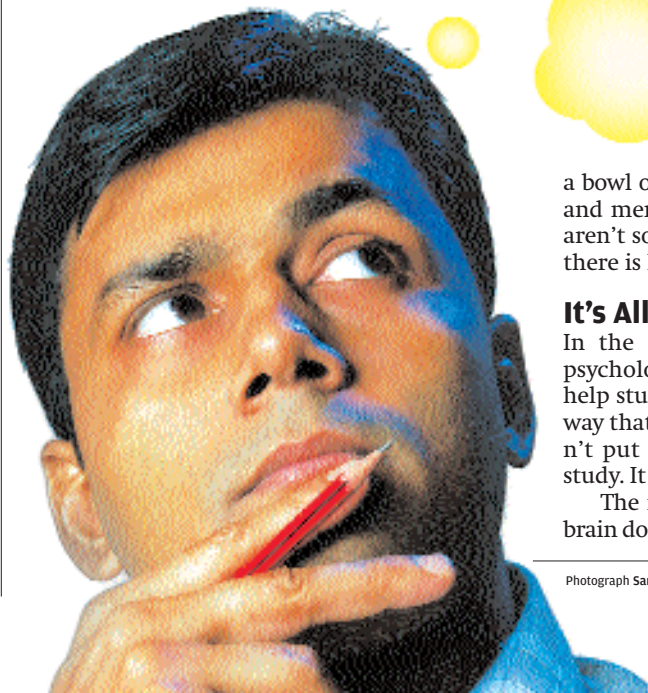
neat little piles and make sense of them.

In the Harry Potter books, Albus Dumbledore uses a "Penseive"—a bowl of sorts—into which he puts his thoughts and memories for quick and easy reference. We aren't so lucky as to have magic on our side, but there is hope for us yet.

It's All In Your Head

In the 1960s, Tony Buzan, a British popular psychology author, popularized a technique to help students take down their lecture notes in a way that was quick, easy to read, and that wouldn't put them to sleep when the time came to study. It was called the mind map.

The idea behind the mind map was that the brain doesn't think in one straight line—it starts at



Photograph Sandeep Patil

a core idea, and different trains of thought burst forth from there. One idea gives birth to so many more, each then resulting in another. And this is exactly what a mind map is supposed to represent: one central theme, and the links between all the various thoughts under that theme.

So rather than taking copious notes, Buzan advised students to sit down and draw these strange structures, claiming it would help them. In a mind map, rather than using full sentences, one employs key words and phrases, which are easier to remember. They can also use colours to distinguish between different lines of thought. Pictures have a way of sticking in our minds, so even though mind maps end up being chaotic, their visual representation registers better in our minds and is easier to recall.

I Want To Make One Too!

Mind maps are really easy to make—they were meant to be. How they finally end up is usually unique to the individual—the structure he uses or how he highlights his ideas—but all follow the same general idea. It all begins with the goal at the centre—the topic of a lecture, the theme of a board meeting, or an idea for your next article. You work outwards from this idea, jotting down key words, and connecting each thought to the next one in that line. If there are two lines of thought that share a relationship, make sure that you mark this link with an arrow. Ideally, a mind map is drawn very quickly, without pausing to judge or review what you've put down so far—this way your mind map becomes a truer picture of your thought processes.

The most effective mind maps are those that are heavily visual—if there is any idea you think needs some attention, make sure it gets it! Use colours, images, anything you can do to highlight it. And if one line of thought exhausts itself, just move over to the next—you can always come back

Concept Mapping

The concept map is another technique to get your thoughts out on paper in a simple, easy-to-understand way. Though it looks quite similar to the mind map, it is different in that it shows the relationships between different concepts rather than follow the hierarchical tree-like form that mind maps take. These relationships are represented by using a phrase to link the concepts—something like “is opposed to” or “is much better than”, and so on. While there is software out there built specifically for concept mapping, mind mapping software that allows for flexible structures (like Mindjet MindManager) could also be used to build concept maps.

if something strikes you later. Most of all, remember that it's *your* mind map, and you have all the freedom to make it in your own special style.

What Is It Good For?

For students, the original targets of the concept, the mind map is a very effective way to summarise information, be it notes in class or while sitting in the library studying. It also comes in handy when its time to slog it out for the exams—having everything arranged out in front of you registers better on one's mind. College life can get hectic sometimes, and a mind map could help you organise your day better—plan out lectures and study times, and perhaps things might not seem so chaotic.

Struggling with an important decision—like buying a house—but worried about whether you've thought of everything? Putting it all down on a mind map will let you look at your thoughts and help you see the bigger picture.

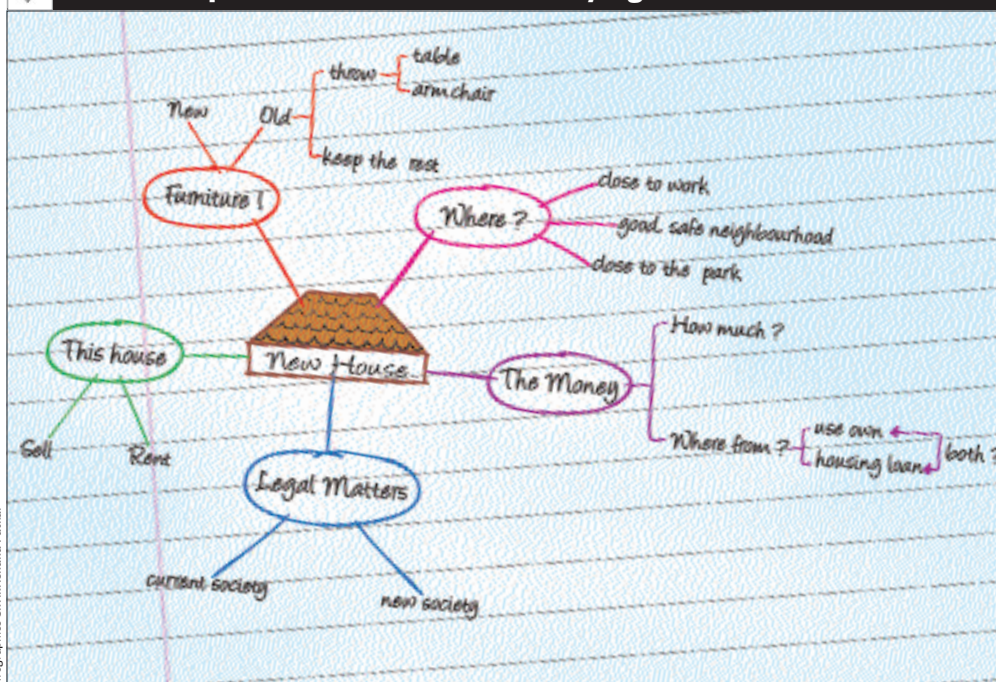
In the office, mind maps are a great help in brainstorming—just throw everything out on the mind map and look at it at leisure to pick out the more appealing ideas. They are also popular in meetings, where they can be used to steer discussions in definite directions rather than having everyone talking away wildly and wasting time.

It isn't just organising thoughts that mind maps are useful for. They can also be used to plan out tasks and projects, highlighting the most important aspects and assigning different tasks to different people. And it isn't just students who benefit from the visual aspect of a mind map: presentations, too, can be made effective with a mind map that shows the entire structure of the information you want to convey.

The Tech Angle

A large part of our lives is now is spent in front of the computer, and it is not hard to guess that

A Mind map one would make when buying a new house



The Tech Way



Let's do something on Mind Mapping

Most mind mapping software lets you easily highlight ideas using special icons and colours

even the art of mind mapping has found its way here. The unfortunate part about mind mapping on paper is that the size of the paper sometimes just isn't enough for complex maps. Things can get quite messy, trying to squeeze in a thought here and an idea there, and we don't really want to have the additional burden of planning out space on a sheet of paper. And in the mad rush of our lives today, we shouldn't have to sit with coloured pens and pencils to make the mind map more engrossing.

Mind mapping software tools have become quite powerful today, while still keeping in mind that people need to do this really quickly. No matter how complex your mind map becomes, it will always be neat and you'll never be short of space. Creating sub-topics or topics at the same level is usually mapped to an easy keyboard shortcut, so you don't need to keep switching between keyboard and mouse. Adding colours and images is just a couple of mouse clicks away, so there's no need to rely on your (probably appalling) drawing skills. Mind map getting too big? The maps are built as tree structures—you can collapse or expand your sub-topics so you only see what you want to.

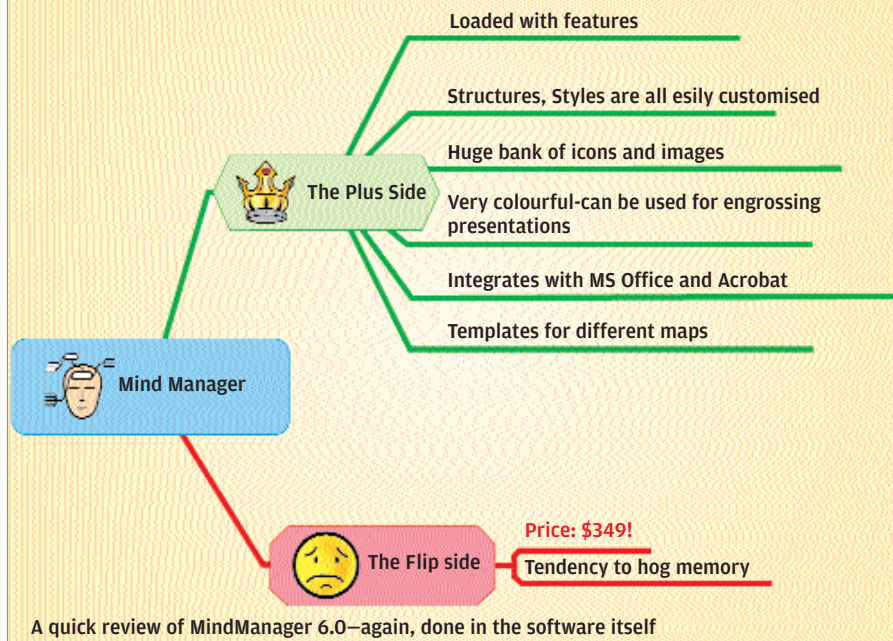
Your Happy Helpers

There are many tools out there to help you make mind maps—from the simple, free ones to the *really* powerful that cost as much as \$250 (Rs 11,500)! A free tool that caught our eye was FreeMind, which is simple, neat, and very easy to use. It offers all you might need—special icons, colours, and even a 'cloud' that encloses each line of thought. Extremely useful, we

think, for the individual. However, your mind map can only have a very simple layout—it doesn't allow you to play with the structure. The keyboard shortcuts are easy to learn and quite logically placed.

For someone looking to incorporate mind maps as a business tool, we found Mindjet MindManager quite impressive. It allows for huge flexibility in the structure of the map, and also provides templates for different types of business scenarios—meetings, decision making, to-do lists, and the like. It also provides numerous options to make your mind map visually appealing, so can be used to make some very interesting presentations.

MindManager 6.0



You can find both these on this month's Digit CD and DVD.

If you're off the beaten track, FreeMind also comes in a Linux and Mac OS flavour as well—try <http://freemind.sourceforge.net>. In the paid category, you would find ConceptDraw MINDMAP and Softneuron Mindmap for your alternative OS needs. Both of these can be ordered from <http://www.mapyourmind.com/macintosh.htm> (don't let the link fool you—the page is actually for Mac and Linux)

FreeMind 0.8.0



Old Way, Tech Way

We love technology here at Digit, but sometimes even we must concede to the old way. True, mind mapping software has taken an already popular concept to new heights, but at the end of it all, there really is no substitute to seeing your ideas laid out in your own hand. There is a special joy in getting involved in drawing your own mind map—something software cannot offer. So if you're going to be using a mind map, we recommend software to get things done quick; but really, you should get your hands dirty once in a while. ☒

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Extra

Large, Please



Backups are essential. CDs are too small. Most folks these days have DVD-ROMs. Combo drives make no sense any more. All this points to one essential piece of hardware—the DVD-Writer!

Jayesh Limaye

Our shootouts reflect a pattern: features and performance are always getting better, and prices are always falling. It's no different this time. It's been almost a year and a half since we last tested DVD-Writers, and this time round, you guessed it—prices have fallen, and features and performance have improved! But we must tell you that DVD-Writers have reached the theoretical speed limits of DVD-Writing. Also, it no longer makes sense to get a Combo drive or a CD-Writer: a DVD-Writer costs just a few hundred rupees extra. Go get yourself one right now!

Oh, wait. What brand, and what model? Well, you'll figure that one out by the time you're through reading this test.

We can hear a few of you asking, why even those few hundred rupees extra? The idea is that you have nothing to lose. A CD costs about Rs 12; a DVD costs between Rs 20 and Rs 40, giving you much more MB per rupee. Besides, we're urging you to back up *all* your important data, which means much of your hard drive—which could typically be anything between 40 and 200 GB. Imagine how many CDs you'd need to back up all that!

If you're wondering "Why back up," you probably haven't been reading *Digit*. We mention at least once in every issue that you should be backing up! You *can't* depend on your hard disk. It could crash any time, and for no apparent reason. Sure, your DVD could get scratched, but at least you can control whether it gets scratched or not.

Then there's the issue of dual-layer. Movies, especially those from abroad, are often on dual-layer DVDs—and if you've imported a DVD movie, you'd certainly want to back it up.

We could go on and on about why you *need* a DVD-Writer, but let's cut the spiel short and get to the tests!

We reviewed 16 DVD-Writers for you this month. The drives we received came from Asus, BenQ, Gigabyte, LG, Lite-On, Plextor, Samsung, and Sony. Of these, four were external drives, and the rest were internal IDE drives. This test is therefore in two sections—internal and external drives.

Segregation was possible only into these two categories, unlike in our last shootout, where single-layer and dual-layer drives were in two different categories. This time, all the drives were capable of writing to dual-layer media.

DVD Formats

When you buy a DVD-Writer, you'll see a host of supported formats mentioned on the box, and you'll probably wonder what these are—and what formats you need support for. That's why we put in this section.

We start off by listing out the available formats: DVD-ROM, DVD-R, DVD+R, DVD+R DL, DVD-R DL, DVD-RW, DVD+RW, and DVD-RAM. ("DL" stands for dual-layer.) While DVD-ROM is a read-only DVD format, the rest are writeable DVD formats.

DVD-R, developed by Pioneer, was the first DVD recording format compatible with stand-alone DVD players. It is a non-rewriteable format and is compatible with 93 per cent of all DVD players and DVD-ROMs, and holds 4.37 GB of data. DVD-RW is a re-writeable version of DVD-R, but is compatible with fewer devices. It allows for about a thousand writes, after which it may not be usable.

DVD+R was developed separately from DVD-R, and is less

compatible across various DVD drives and players than DVD-R is. DVD+RW is a rewriteable version of DVD+R, and both these have the same capacity—4.37 GB. These formats have been strongly backed by Sony and HP.

Then there are DVD-R DL and DVD+R DL, the dual-layer formats, which have capacities of 8.5 GB. They are nothing but DVD-R and DVD+R with two layers to store data. They require drives that support these formats, which are quite common today.

Finally, DVD-RAM is a format that allows repeated recording and erasing, but it enjoys the lowest compatibility amongst all the DVD formats—it is supported by only a select few drives. DVD-RAM discs are typically housed in cartridges. This format supports 4.7 GB, which is the highest capacity in the DVD realm. DVD-RAM discs find application mainly in real-time video capture.

In addition to this—and we hope we're not adding to the confusion—each of these media has a double-sided version, which you can think of as two discs with the label sides stuck together—you can flip them over and write on the other side. Naturally, they have twice the capacity of the single-sided media, but they're hard to find.



INTERNAL DVD-WRITERS

These sport the IDE interface, and connect to the PC using an IDE cable. They are more popular than their external counterparts because of their considerably lower prices and due to them being faster because, well, the interface is faster. Other than this, there isn't much of a difference between an internal and an external drive. Regular home and office PC users and office PC users generally opt for internal drives.

We tested twelve internal DVD-Writers in this shootout. These were the Asus DRW-1608P2S, BenQ DW1640 and DW1625, Gigabyte GO-1623A-RH, LG GSA-4167B, Lite-On SHW-1635S, Super AllWrite SHM-165P6S and LightScribe

SHW-16H5S, Plextor PX-716A and PX-740A, Samsung SH-W162, and the Sony DRU-810A.

Features

Read and write speeds

The read speeds of all the drives were almost identical, with CD-ROM read speeds of 40x and 48x, and DVD-ROM read speeds of 16x. 16x is pretty good; whether you're watching DVD movies or copying files, none of these drives should pose a speed problem.

Similarly, write speeds were almost identical across the brands. The BenQ DW1625 seemed to be left behind, partly because this is one of the older models. It supported writing to DVD-R at a maximum speed of 8x, as against the 16x supported by the rest of the writers. In fact, neither of the BenQ models can be called new; they've been around for a while. That's also the reason why neither of them supports the DVD-R DL standard.

Multi-drives

There were three multi-drives in this test: the Asus DRW-1608P2S, Lite-On Super AllWrite SHM-165P6S, and the LG GSA-4167B. A multi-drive supports reading from and writing to all existing DVD formats, including DVD-RAM. The ability to write to DVD-

How We Tested

All the DVD-Writers were tested on a single test machine to obtain comparable results. The test machine we used comprised an Intel Pentium IV Extreme Edition processor running at a stock speed of 3.4 GHz, a Foxconn 955X7AA-8EKRS2 motherboard, 1 GB of Micron 533 MHz DDR RAM, an ATI Radeon X850 Platinum Edition 256 MB PCIe card, and a Maxtor Maxline III 250 GB SATA150 hard drive. The test machine was powered by an Antec Neo480 480-watt power supply. Windows XP Professional with SP1 along with the latest drivers was installed afresh on the test machine. Nero Burning ROM 7 Ultra Edition was installed for the purpose of burning CDs and DVDs. The internal drives were set as master and connected to the primary IDE channel. The external drives were connected using the USB 2.0 interface.

The test process consisted of two sections—reading and writing of different types of media.

Reading Tests

Nero CD-DVD Speed was used to record data transfer rates, access/seek times, CPU utilisation, burst rate, etc., for CDs as well as DVDs. This software comes bundled with Nero Burning ROM 7.

SiSoft Sandra 2005 SR3, which is a system-wide performance benchmark as well as a diagnostic utility, was used to measure read speeds and access times.

dbPowerAmp, which is an audio format conversion and audio CD ripping tool, was used to rip pre-selected audio tracks of our

test audio CD. The tracks were ripped to the MP3 format at 44 KHz and 128 Kbps, and the time was logged.

DVD Decrypter is a tool used to rip DVD video files to the hard drive. This software was used to rip a pre-selected chapter of our test DVD to the hard drive, and the time taken was noted.

Writing Tests

These included logging the time taken to write to CD-R, CD-RW, DVD-R, DVD+R, DVD-RW and DVD+RW. Assorted data totalling 700 MB was used to write to CD-R, CD-RW and DVD-RW, and the time was logged. Sequential data consisting of a 700 MB file was used to write to CD-R. Similarly, assorted and sequential data of 4.5 GB was used to write to DVD-R and DVD+R media, and the time taken was noted.

The media used were 52x CD-R from EuroVision, 10x CD-RW from Moser Baer, 8x DVD-R from Moser Baer, 8x DVD+R from Sony, and 2x DVD-RW from Moser Baer. A point to note is that though most DVD-Writers can burn DVDs at 16x, this media is not easily available in Indian markets even now, and even if it is, the costs are prohibitive. We therefore used the more commonly available and more affordable 8x media to compare the drives.

Other features such as support for various DVD types, maximum read and write speeds, LightScribe capability, tray build quality, silent operation, and bundled accessories such as the data cable, manual, media, bezels, etc. were noted and rated to arrive at the final score for a drive.

RAM drives makes these drives a very useful tool for those who require video capture and video editing. DVD-RAMs are also especially good for backups, since you can make incremental backups. (Incremental backups are those that only incorporate changes since the last backup.)

CD burning

Almost all the drives supported writing to CD-R at 48x. The Asus supported only 40x for CD-R, but strangely, it supported 32x for CD-RW, which is the UltraSpeed standard. Some vendors adver-

tise their products as supporting the UltraSpeed standard; the HighSpeed standard is 24x for CD-RW.

LightScribe

The LightScribe technology has been around for quite a few months, but drives supporting this standard are just appearing in the Indian market. The Lite-On SHW-16H5S and the BenQ DW1625 were the only drives that supported LightScribe. As you might know, LightScribe is a technology that allows you to etch CD or DVD labels on compatible media using the drive's laser. This is an exciting technology, and with plummeting drive and media prices, it's bound to soon catch people's fancy.

Form Factors

Most of the drives featured the half-height form factor. Half-height drives have a much lower depth than do traditional drives, and can fit in almost any cabinet, leaving space for better air ventilation. Such drives also tend to interfere less with other PC components such as the motherboard, memory, and cables.



Plextor PX-716A

So What In The World Is LightScribe?

After burning a CD or a DVD, you mark it in order to identify its contents. Traditionally, this is done by marking the disc's label surface with a marker pen—writing out the title of the disc or listing its contents. This can damage the disc if too much pressure is applied while writing. And then there is the messy possibility of ink spilling. Also, the disc could fall (and thereby get scratched) while you're writing on it. And finally, handwritten notes on a disc don't look pretty!

An alternative way of marking a disc's contents is to print the CD/DVD face label on readily-available sticky labels and then stick them on the disc face. This has to be done with caution because if the label is not stuck properly, it might dislodge while it's in the drive and the disc is spinning, thereby damaging the drive.

All this is changing with the introduction of LightScribe. Invented by Hewlett-Packard Development Company, L.P., LightScribe is a direct disc labelling technology, an exciting new way of disc labelling that enables you to <burn> CD and DVD labels by simply flipping a disc and putting them back in the drive!

LightScribe drives can burn text and graphics onto the surface of a LightScribe disc using the drive's laser. LightScribe discs are coated with a special reactive dye that changes chemically when a 780 nm infrared laser

strikes the disc's label side, creating <etched> text and images.

To be LightScribe-capable, you need to have a LightScribe drive, LightScribe compatible media, and a LightScribe capable CD/DVD burning software. Some LightScribe capable CD/DVD burning software such as Nero can import digital photos, images or text and burn it as Title, Content, or Full (meaning both Title and Content)—either in a circular or a straight way and this determines the amount of radial space that it will occupy. While you cannot rewrite or erase a LightScribe label, you can add more content in the available un-reacted space.

The chemical reaction of the coating material with the laser beam is non-toxic and odourless, and the label produced is supposed to last for nine months under indoor lighting without fading. At present, you can only print LightScribe labels in greyscale, but in the coming years, you can expect LightScribe drives that print full-colour labels.

While the technology is currently limited to PC CD and DVD drives, HP plans to make this technology a part of consumer electronics by introducing it in home entertainment products such as stereo-component CD recording decks and set-top DVD recorders. So let your creativity flow, and add a personal touch to your discs. Burn, flip, burn!

WISDOM OF THE ORIENT SERIES #25

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"Wise men subscribe
when the time is ripe.
The unwise keep
waiting for a better offer
that may never come"

BRIEF TU CHICK, PHILOSOPHER

A public interest message issued by digit

Scoreboard DVD-Writers

BRAND	Asus	Benq	Benq	Gigabyte	LG	Lite-On
Model	DRW-1608P2S	DW1625	DW1640	GO-W1623A	GSA-4167B	SHW-1635S
Features	20.10	17.46	16.74	19.07	19.60	21.87
Drive Specifications						
Write Speeds						
DVD+R/-R (x)	16/16	16/8	16/16	16/16	16/16	16/16
DVD+RW/-RW (x)	8/6	4/4	8/6	8/6	8/6	8/6
DVD+R DL/-R DL/-RAM (x)	8/8/5	2.4/NA/NA	8/NA/NA	8/4/NA	6/4/5	8/4/NA
CD-R/RW (x)	40/32	40/24	48/32	48/24	48/32	48/24
Read Speeds: CD-ROM/DVD-ROM (x)	40/16	40/16	48/16	48/16	48/16	48/16
Interface Type	UDMA-3	UDMA-2	UDMA-2	UDMA-3	UDMA-2	UDMA-3
Data Buffer Size (MB)	2	2	2	2	2	2
Tray Build Quality (So5)	4	3.5	3.5	4	3.5	4
Half-height (Yes/No)	4	6	4	4	4	4
Silent Operation (So5)	3.5	3.5	3.5	4	4	4
Package Contents						
Data/Audio Cable (Yes/No)	4/4	6/6	6/6	6/4	4/4	6/4
Manual/Quick Setup Guide (Yes/No)	6/4	6/4	6/4	6/4	6/4	6/4
Media—CD	None	LightScribe CD	None	None	None	None
Media—DVD	None	None	None	None	None	DVD+R, DVD-R
Software—Burning	Nero	Nero	Nero	Nero	Nero	Nero
Software—DVD Playback	None	Benq Qvideo	Benq Qvideo	Cyberlink PowerDVD	Cyberlink PowerDVD	Cyberlink PowerDVD
Software—Other	Ulead DVD MovieFactory 4 Disc Creator	None	None	None	None	None
Miscellaneous (Extra Bezels, etc.)	None	None	None	Bezel	None	1 bezel
Performance	32.47	40.60	41.08	45.65	44.22	44.91
Reading						
Nero CD/DVD Speed Using a DVD						
Transfer Rate (Average) Measured in x	9.37	6.25	12.11	9.21	7.73	9.22
Access/Seek Time (Random) (Millisec)	113	96	97	109	94	111
CPU Utilisation (4x) %	31	31	25	25	43	25
Burst Rate (MB/s)	39	24	24	40	26	40
Spin Up/Down Time (Sec)	2.41/2.46	2.97/1.9	3.11/3.74	2.03/0.93	3.66/2.58	2.03/2.99
Eject/Load Time (Sec)	2.09/2.46	1.86/1.25	2.02/1.32	1.64/1.57	2.92/1.49	1.7/1.6
Recognition Time (Sec)	11.68	7.57	9.57	8.94	15.19	8.61
Nero CD/DVD Speed Using a CD						
Transfer Rate (Average) Measured in x	31.84	31.54	37.51	37.84	36.6	37.86
Access/Seek Time (Random) (Millisec)	160	96	110	109	113	106
CPU Utilisation (8x) %	4	7	7	56	37	10
Burst Rate (MB/s)	29	19	23	35	24	34
Spin Up/Down Time (Sec)	2.12/2.62	3.17/3.08	2.21/3.78	2.15/0.16	4.38/3.57	2.02/5.16
Eject/Load Time (Sec)	1.12/3.95	1.86/1.18	2.05/1.29	1.58/1.51	2.92/1.49	1.72/1.6
Recognition Time (Sec)	10.44	6.67	6.63	13.39	10.42	12.91
SiSoft Sandra 2005 SR3 Using a DVD						
Drive Index (kB/s)	7548	5046	9058	7509	6147	7442
Sequential/Random Read (MB/s)	8/6	6/4	11/6	8/6	7/5	8/6
Access Time (Recognition Time) (Fullstroke, ms)	177	259	277	163	229	183
Audio CD Ripping Using dbPowerAmp (Sec)	44	47	47	49	42	41
DVD Video Ripping Using DVD Decrypter (Sec)	58	62	58	78	113	64
Writing						
CD-R Assorted/Single Data (Sec)	263/261	202/198	198/196	176/177	182/181	186/186
CD-RW Assorted Data (Sec)	518	517	516	518	516	517
DVD-R Assorted/Single Data (Sec)	496/488	561/550	952/515	512/507	482/484	520/516
DVD+R Assorted/Single Data (Sec)	448/390	542/535	505/494	522/521	482/481	516/515
DVD-RW 700 MB Assorted Data (Sec)	450	398	386	464	456	453
Price Index	8.77	5.10	7.28	9.50	8.55	12.00
Price (In Rupees)	3900	6700	4700	3600	4000	2850
Total	61.34	63.16	65.10	74.21	72.37	78.78



+ Over-speed burning for DVD+R
- None in particular



+ LightScribe support
- Expensive



+ None in particular
- Expensive



+ Good performance
- None in particular



+ Support for all DVD formats
- No bundled blank media



+ Good performance, inexpensive
- None in particular



DVD-Writers

Lite-On LightScribe SHW-16H5S 25.37	Lite-On Super AllWrite SHM-165P6S 23.00	Plextor PX-716A 19.35	Plextor PX-740A 17.49	Samsung SH-W162 17.49	Sony DRU-810A 19.49
16/16	16/16	16/16	16/16	16/16	16/16
8/6	8/6	8/4	8/6	8/6	8/6
8/4/NA	8/8/5	6/6/NA	8/4/NA	8/4/NA	8/4/NA
48/24	48/24	48/24	48/32	48/32	48/32
48/16	48/16	48/16	48/16	48/16	48/16
UDMA-3	UDMA-3	UDMA-2	UDMA-2	UDMA-2	UDMA-3
2	2	8	8	2	2
4	4	4	4	3	4
4	4	4	4	4	4
4	4	4	4	3.5	4
6/4	6/4	6/6	6/6	4/4	4/6
6/4	6/4	6/4	6/6	6/4	4/4
LightScribe CD	None	None	None	None	None
DVD+R, DVD-R	DVD+R, DVD-R	DVD+R	None	None	None
Nero	Nero	Nero 6	Nero 6	Nero	Nero
Cyberlink PowerDVD	Cyberlink PowerDVD	None	None	None	None
None	None	PlexTools Professional	Set Speed Utility	None	None
Bezel	3 bezels	Bezel	None	None	Bezel
45.37	46.30	43.48	41.30	40.34	44.85
9.26	9.19	9.06	12	9.13	9.2
105	107	96	133	100	103
24	41	25	25	33	25
40	34	42	24	25	36
1.61/0.89	1.34/2.92	3.18/4.34	3.76/3.87	2.1/2.46	1.59/1.12
1.73/1.6	1.8/1.65	1.85/18.14	2.11/1.44	1.97/1.22	1.82/1.72
9.1	13.93	1.03	10.56	14.82	8.54
37.92	37.59	31.83	37.42	31.57	37.92
103	125	89	182	89	109
10	14	4	7	6	15
34	32	33	23	21	32
1.89/4.62	2.04/5.01	2.14/4.71	2.16/3.84	2.36/2.74	1.93/4.27
1.7/1.61	1.83/1.65	1.84/10.9	2.1/1.41	1.97/1.22	1.82/1.69
13.43	10.11	0.37	7.35	9.64	12.45
7529	7218	7172	9013	7409	7448
8/6	8/5	8/6	11/7	8/6	8/6
161	242	206	222	168	157
42	65	115	47	232	44
64	62	107	62	64	63
183/180	164/159	175/172	210/200	190/188	186/182
515	521	522	524	518	517
507/500	509/507	508/501	527/525	513/842	516/503
521/518	513/514	435/430	506/505	495/494	525/519
457	453	459	386	443	384
8.60	11.09	5.70	8.55	9.50	11.79
3975	3085	6000	4000	3600	2900
79.34	80.39	68.52	67.34	67.33	76.13



- + LightScribe support, good performance
- None in particular



- + Good performance, supports all DVD formats
- None in particular



- + Good performance
- Expensive



- + Good performance
- None in particular



- + None in particular
- No bundled blank media



- + Good performance
- No bundled blank media

Cables And Manuals

The Asus, Samsung and Sony were the only drives that shipped with data cables. With the other drives, you'll need to purchase the cable separately. Only the Sony drive came with a printed manual, whereas the others came with just quick-start guides. Of course, you can always download the manual from the manufacturer's Web site, but a printed manual is always preferable!

Bundled Media

Most of the drive manufacturers decided not to bundle blank media with the drives. Surprisingly, the Lite-On drives, the lowest-priced ones, came with blank media. The BenQ DW1625 and the Lite-On Super AllWrite even shipped with a LightScribe CD!

Bundled Software

The Asus DRW-1608P2S came with Ulead DVD MovieFactory 4 Disc Creator, a very good video creating and editing software.

The Plextor PX-716A, which comes under the Premium range, came with the famed PlexTools Professional, which allow you to tweak the drive's features—such as maximum read and write speeds—to suit your needs. It also featured GigaRec—a technology that allows you to write up to 1 GB of data to CD.

Performance

Speeds And Access Times

In the Nero CD-DVD Speed Test, the Plextor PX-740A logged the highest read speeds for a DVD at an average speed of 12x. The highest burst speed was logged by the other Plextor, the PX-716A, at 42 MBps. Copying data from these drives will be faster than from other drives.

In the SiSoft Sandra test, once again, the Plextor PX-740A logged the highest score in the data transfer test. The Lite-On LightScribe SHW-16H5S logged the lowest access time, which means it is the fastest in accessing data on the media. A fast access time means you can search faster on a CD or DVD, and navigate videos with better responsiveness.

Audio CDs

Audio CD ripping times were more or less the same across the drives, except that the Samsung and the Plextor PX-716A proved

to be much slower. We repeated the tests several times and got the same results every time. For reasons unknown, the Plextor, which is otherwise a fast reader, is somewhat slow when it comes to reading audio CDs.

DVD Ripping

In these tests, too, the Plextor PX-716A lagged behind the others, being slower by a factor of two. The LG drive was also almost as slow as the Plextor in ripping DVD movies. If DVD ripping is slow on a drive, DVD playback is bound to suffer.

CD-R Writing

The Plextor PX-716A was slow in some cases, fast in others—for example, in the CD-R writing test, it was the fastest. The Giga-byte GO-W1623A, which is supposed to be able to write at 48x, could write only at 16x—and hence logged the lowest scores. However, when we tried writing to another brand of media, the problem disappeared, and it was able to write at 48x. This points to a compatibility issue.

DVD-R Writing

The LG was the fastest here, followed closely by the Asus. There was not much variation in the writing speeds of the rest of the drives, with the exception of the BenQ DW1640, which took almost twice the time to finish writing the assorted DVD-R.

DVD+R Writing

We found that both the Asus and the Plextor PX-716A could write at 12x to the 8x DVD+R media we had, and they did so without a flaw! This is possible because of the drive's over-speed burning capabilities, meaning it can write to media at speeds faster than the media's rated speed.

BEST BUY
digit
FEBRUARY 2006



The Plextor was the faster of the two. The fact that these drives offer over-speed writing out-of-the-box for DVD+R, without producing coasters, is a feat in itself.

In Conclusion

Features and performance have been taken into account earlier on in the tests, but the price factor decided the winner.

The Lite-On LightScribe SHW-16H5S was unique, with its LightScribe capability. It came with a LightScribe CD along with blank DVD+R and DVD-R media. Its performance was also better than that of most drives, and it is priced at Rs 3,975—which is very good for a LightScribe drive. We therefore awarded the Lite-On LightScribe SHW-16H5S the Digit Best Buy Silver.

The Lite-On Super AllWrite SHM-165P6S is a multi-drive. It is capable of writing to dual-layer media at 8x, which is the fastest in its class. It came with blank DVDs and a silver as well as a black bezel so you can change the bezel to match the colour of your PC's cabinet. To top it all, it was the best performer, and is priced at Rs 3,085, which is dirt cheap for a multi-drive with top-notch performance. The Lite-On Super AllWrite SHM-165P6S therefore gets a well-deserved Digit Best Buy Gold.

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EXTERNAL DVD-WRITERS

External DVD-Writers connect to a PC either via USB 2.0 or FireWire (IEEE 1394) or both. These are plug-and-play devices, and so do not need the PC to be shut down before they can be plugged in. Also, they need an external power supply, and ship with an AC adapter.

Like we've mentioned, external DVD-Writers are not as popular with the average home user because they cost a lot more than their internal counterparts,

while not offering any extra features. These drives are primarily meant for small offices, where people would want to connect them to different machines for backups.

We received four drives in this category: the BenQ EW162L, Lite-On SHW-1635SU, Plextor PX-716UF, and the Sony DRX-800UL.

Features

Most external DVD-Writers are in fact internal writers encased in a rugged casing, and with external connectivity. Thus, the Lite-On SHW-1635SU is the same as the Lite-On SHW-1635S, the Plextor PX-716UF is the PX-716A, and the Sony DRX-800UL is the DRX-800A. The internal versions of the first two of these—the SHW-1635S and the PX-716A—have been featured in the previous section. The external versions, naturally, have many of the same features.

Traditionally, external DVD-Writers have been a generation behind the internal writers, and were slower. Not any more. The external drives featured in this test boasted of the highest write speeds of 16x for DVD-R and DVD+R, just like the internal drives. The exception to the rule was the BenQ EW162L, which has been around for a long time.

It supported only 4x write speeds for DVD+RW, as against 8x supported by the other drives. It also lacked support for the DVD-R DL format.

Interfaces

The BenQ and Lite-On drives had only the USB 2.0 interface, while the Plextor and Sony featured both the USB 2.0 (480 Mbps) as well as the FireWire (400 Mbps) interface. The drives are backward-compatible with USB 1.1. All the drives shipped with the cables for the supported standards, as well as the power adapters.

Physical Considerations

All the drives had rugged build quality, and we couldn't decide which was better. The Sony and



Sony DRX-800UL

Plextor drives sported killer looks. The BenQ's casing had perforations to aid ventilation—this is very helpful in Indian conditions.

All the drives except the Lite-On shipped with stands to help keep them upright—a vertically-placed drive helps save valuable PC desk space.

EZ-DUB

A unique feature on the Lite-On drive was the EZ-DUB function. The drive ships with EZ-DUB software from Ulead, which is a CD/DVD burning and data backup software. After you install it, the software detects whether you have an EZ-DUB compatible drive, and sits quietly in the System Tray. Most of the EZ-DUB functionality comes from the software, but the drive, too, has two extra buttons on the top that make it even easier to burn DVDs (or CDs).

The 'File' button launches the EZ-DUB software, and a Wizard helps you drag and drop files you wish to write to disc, to the EZ-DUB main window. When you are done selecting the files, you press 'File' again to burn the compilation. The 'Dub' button is for making a 1:1 disc copy.

Next-Gen storage: Blu-ray vs. HD-DVD?

Even as we progress from the *meagre* 700 MB storage space of the CD to the 4.7 GB offered by DVDs (or even the 8.5 GB offered by dual-layer DVDs), we are left wondering if that much capacity is enough for our ever-growing digital real-estate needs. And here's where the next-gen standards of storage media—Sony's Blu-ray and Toshiba's HD-DVD—come into play.

Both these formats support considerably higher data storage capacities—Blu-ray discs can store 25 GB on the single layer and 50 GB on the dual-layer version, and HD-DVD has proven that it can store 15, 30 and 45 GB of data in the single, dual and triple-layer versions respectively. TDK has reportedly produced a 100 GB quad-layer Blu-ray disc, which puts it miles ahead of HD-DVD where sheer data volume is concerned. The upgradeability path to these optical drives requires the consumer to purchase drives supporting these standards, as neither of these standards is backward-compatible (similar to the case of DVD a few years ago). This is because both these standards deploy a lower-wavelength, 405 nm laser. This falls in the violet-blue part of the electromagnetic spectrum—hence the name Blu-ray. A different and more expensive laser head is hence called for. Also, the lower wavelength of the laser allows data to be written at a higher resolution, enabling a much higher amount of data to be packed onto the same surface area as a DVD or CD.

The media types of Blu-ray and HD-DVD are also different from that of DVD. While HD-DVD uses a specification that is much closer to that of DVD, a 0.6 mm thick base and a 0.6 mm thick protective layer, Blu-ray uses a thicker 1.1 mm base but a much thinner, 0.1

mm protective layer. As far as data transfer rates go, Blu-ray is again the front-runner, being able to achieve a speed of 12x (400 Mbps) at the same rotational speeds at which a HD-DVD drive will be able to achieve 9x. Such speeds might not matter much today, but to accommodate the needs for higher data throughput in the future, this is sure to make a difference.

The Blu-ray "camp" includes Sony, TDK, Dell, Hitachi, Apple, HP, Philips and Samsung, and consumer electronics giants such as Panasonic, Samsung, Sharp, Pioneer and LG Electronics—as also game makers EA and entertainment companies Twentieth Century Fox, Vivendi Universal, Walt Disney and Sony Pictures. HD-DVD is backed by NEC, Sanyo, and heavyweights such as Intel and Microsoft, as well as entertainment companies such as HBO, New Line Cinema, Universal Studios Home Entertainment and Warner Home Video. In late December 2005, HP announced that it would stop taking sides, and support both formats.

Talks for a hybrid disc technology, which were in the news a while ago, are in the cold as of now, and hence backward compatibility of these media seem out of the question. At the end of the day, the consumer is left to decide which side to choose. On one side is Blu-ray with its bevy of supporters, along with its higher capacity and data transfer speeds. On the other side is HD-DVD with its lower price tag, and the vital backing of the biggest names in the computing world—Intel and Microsoft—which guarantees it native support in future computers and operating systems such as Vista. When these drives begin shipping in 2006, the consumer will face a daunting task—which way to upgrade?



FEBRUARY 2006



Scoreboard – External Drive

BRAND	Benq	Lite-On	Plextor	Sony
Model	EW162I	SHW-1635SU	PX-716UF	DRX-800UL
Features	17.87	22.73	22.87	19.53
Drive Specifications				
Write Speeds				
DVD+R/-R (x)	16/16	16/16	16/16	16/16
DVD+RW/+RW (x)	4/4	8/6	8/4	8/6
DVD+R DL/-R DL (x)	4/NA	8/4	6/6	4/4
CD-R/RW (x)	40/24	48/24	48/24	48/24
Read Speeds: CD-ROM/DVD-ROM (x)	40/16	48/16	48/16	48/16
Interface Type	USB 2.0	USB 2.0	USB2.0, Firewire	USB2.0, Firewire
Data Buffer Size (MB)	2	2	8	2
Tray Build Quality (S05)	3.75	4	4.25	4.5
Indicator LED's	2	1	2	1
Silent Operation (So5)	5	5	5	5
Package Contents				
Data Cable	USB	USB	USB, Firewire	USB, Firewire
Manual/Quick Setup Guide	On CD/4	On CD/4	On CD/4	On CD/4
Media—DVD	DVD+R	DVD+R, DVD-R	DVD+R	None
Software—Burning	Sonic RecordNow	Nero	Nero	Nero
Software—DVD Playback	InterVideo WinCinema	CyberLink PowerDVD	None	None
Software—Other	None	EZ-Dub	Plextools Professional	None
Miscellaneous	None	EZ-Dub Data backup functionality	None	None
Stand	4	6	4	4
Performance	35.21	37.06	31.67	37.04
Reading				
Nero CD/DVD Speed Using a DVD				
Transfer Rate (Average) Measured in x	6.22	9.22	Failed	8.99
Access/Seek Time (Random) (Millisec)	94	107	96	110
CPU Utilisation (4x) %	26	29	42	33
Burst Rate (MB/s)	23	28	29	26
Spin Up/Down Time (Sec)	2.88/2.13	1.69/2.94	3.33/4.26	1.75/3.12
Eject/Load Time (Sec)	1.88/1.34	1.66/1.57	1.73/18.14	1.52/1.68
Recognition Time (Sec)	7.38	9.25	1.05	10.16
Nero CD/DVD Speed Using a CD				
Transfer Rate (Average) Measured in x	31.54	37.86	32.29	34.21
Access/Seek Time (Random) (Millisec)	94	104	86	98
CPU Utilisation (8x) %	8	11	5	12
Burst Rate (MB/s)	18	25	25	25
Spin Up/Down Time (Sec)	3.05/3.29	2.18/5.08	2.15/4.56	2.11/5.54
Eject/Load Time (Sec)	1.85/1.35	1.7/1.58	1.71/10.8	1.93/1.67
Recognition Time (Sec)	5.32	12.42	0.37	10.24
SiSoft Sandra 2005 SR3 Using a DVD				
Drive Index (kB/s)	5047	7505	4992	7482
Sequential/Random Read (MB/s)	6/4	8/6	5/4	8/6
Access Time (Recognition Time) (Fullstroke, ms)	260	167	213	170
Audio CD Ripping Using dbPowerAmp (Sec)	46	45	116	45
DVD Video Ripping Using DVD Decrypter (Sec)	60	59	89	58
Writing				
CD-R Assorted/Single Data (Sec)	222/202	159/158	164/169	161/159
CD-RW Assorted Data (Sec)	521	518	519	517
DVD-R Assorted/Single Data (Sec)	516/527	509/503	508/505	511/509
DVD+R Assorted/Single Data (Sec)	397/388	532/529	617/470	540/533
DVD-RW 700 MB Assorted Data (Sec)	303	452	454	454
Price Index	11.99	12.00	6.93	11.30
Price (In Rupees)	6500	6495	11250	6900
Total	65.07	71.79	61.47	67.87



- + Over-speed burning for DVD+R
- No FireWire interface



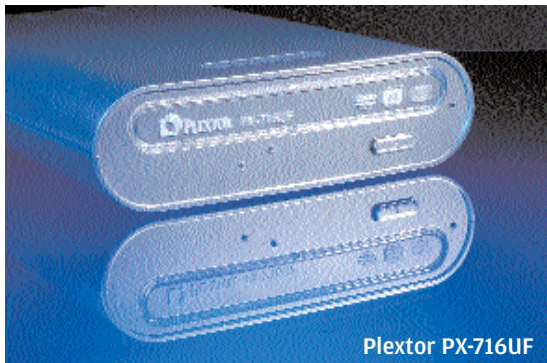
- + Good performance, EZ-DUB
- No FireWire interface



- + None in particular
- Very expensive



- + Good performance
- None in particular



Plextor PX-716UF

Performance

Read speeds and access times

We carried out the Nero CD-DVD Speed Test on DVDs as well as CDs to gauge read speeds, access times, CPU usage, etc. for the drives. In the DVD read test, we found the Lite-On the fastest, with the Sony not much slower. The Plextor could not complete the transfer rate test despite multiple attempts.

In the CD read test, the Lite-On was the top performer. The SiSoft Sandra test reflected similar results, and we can conclude that the Lite-On is a better drive for when you need to read data—as in when you install software, restore backed-up data, or watch movies off the drive.

Ripping

In the audio CD ripping test as well as in the DVD video ripping test, all the drives performed well except the Plextor. Something—we don't know what—crippled this drive's performance, causing it to take almost twice the time, in both the tests, that the others did.

Writing

In the CD-R writing test, the BenQ was the slowest, and the Lite-On was the fastest. In the DVD-R writing test, the Plextor and Lite-On were neck-and-neck, with just a couple of seconds separating them. The picture was a bit different in the DVD+R

writing test: the BenQ drive supported over-speed burning! It could effortlessly burn 8x DVD+R media at 12x, thus taking about 25 per cent less time per DVD—to do so as compared to the other drives. This is significant in, say, offices, where many DVDs are burnt every day.

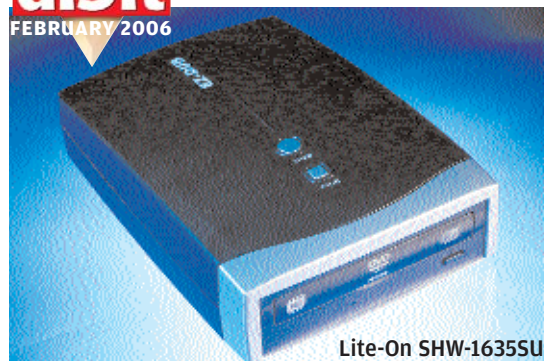
The Plextor produced mixed results in this test. Whereas it scored second-best in the sequential data write, it came in last in the assorted data write test. For backup purposes, therefore, the Lite-On is better if the media is CD-R, and the BenQ is undoubtedly better for DVD+R.

In the DVD-RW writing test, the BenQ once again proved its mettle by being able to over-speed burn the media. It burnt data at 2.4x for the 2x DVD-RW, while the others drives could only burn at the rated 2x.

In Conclusion

So who's the winner? We need to take the prices into consideration to figure that out. The prices ranged from the Rs 6,495 for the Lite-On to the astronomical Rs 11,250 for the Plextor.

The Lite-On DVD-Writer returned good performance as well as a good feature set, which included EZ-DUB. And it carries the lowest price tag. We've therefore adjudged the Lite-On SHW-1635SU the winner of the Digit Best Buy Gold in the external DVD-Writers category.



Lite-On SHW-1635SU

A Parting Word

In this shootout, we tested and compared a large range of DVD-Writers that are available in the Indian market.

Those of you who read our last review of DVD-Writers—carried in our November 2004 issue—might have noticed that there was a great degree of variation in the performance and prices of the drives that were reviewed back then. This time, it's a completely different picture...

The technical limits of DVD-Writing have been reached, like we mentioned earlier, and almost all the drives had comparable features and maximum read and write speeds.

The only new technology we've seen this time round is LightScribe, and even this is a niche technology. Drives that feature it are priced considerably higher. With the unavailability of LightScribe compatible media in India, it remains to be seen how well LightScribe DVD-Writers will take off here.

The same can be said for DVD-RAM drives and media. Despite boasting of a 9.5 GB capacity, and having been around for quite a long time, it's still hasn't been able to garner enough support from drive manufacturers—owing to the considerably high price tag of the media.

One technological advancement in writers has been the introduction of the SATA interface, but, as of yet, no such devices are available in the Indian markets.

When we test optical storage devices the next time round, we probably will not be testing only DVD-Writers, because Blu-ray and HD-DVD-Writers will soon make forays into PC hardware markets worldwide.

Pioneer launched the first Blu-ray drive—the BDR-101A—for the PC in late December 2005, thus becoming the first new format to hit the markets after DVD. HD-DVD will surely follow soon.

Though this may sound repetitive, buying CD-Writers just doesn't seem to make sense today, considering the falling prices of DVD-Writers. If you buy an optical drive, make sure it's a DVD-Burner! ■

jayesh_limaye@thinkdigit.com

Contact Sheet – DVD Writers

Brand	Company	Phone	E-mail	Web site
Asus	ASUSTek Computer Inc.	022-40058894	info_india@asus.com.tw	www.asus.com.tw
Benq	BenQ India Pvt Ltd	022-25705230	salesinquiryin@benq.com	www.benq.com
Gigabyte	Gigabyte Technology (India) Ltd	022-26526696	sales@gigabyte.in	www.gigabyte.in
LG	LG Electronics India Ltd	9899302074	avarshney@lgezbuy.com	www.lgezbuy.com
Lite-On	Mediatech India Distribution Pvt Ltd	022-26361111	digit@mediatechindia.com	www.liteonit.com.tw
Plextor	Prime ABGB Pvt Ltd	022-23896600	primeservices@vsnl.com	www.plextor.com
Samsung	Samsung India Electronics Ltd	011-41411234	vikas.tagra@samsung.com	www.samsungindia.com
Sony	Rashi Peripherals Pvt Ltd	022-28221013	navinderc@rptechindia.com	www.sony.com

Deciding Upon A Movie

We've all had this experience where you watch one movie and your friends watch another, and then you wish you'd watched "theirs" instead! So how does one go about choosing which movie to watch?

A review certainly helps, but with all that is available, where does one look? We decided to check if it's the newspaper that still rules, or if the Net upsets the "old way" again

Jyotsna Rege (jyotsna_rege@thinkdigit.com)



You can choose to read it on a page...



... or get more extensive information online

1

Finally! A day off from work, and a Saturday at that! Yippie! (Sorry, Yahoo! was taken!)

"I haven't caught a flick in ages," I thought. So it was decided—a movie! I started hunting for a newspaper. Whoops, I realised I get too many papers at home! Anyway, eeny meeny miney moe...

Time taken: 2 minutes

Just when you stop believing in miracles, I got another Saturday off—OK, I'm lying. I would have to get to office after the movie to do this write-up. Still, I was getting to watch a movie at company expense... how many times can you claim to have done that?

Time taken: Nothing

2

Looking up the movie was not difficult. I just picked up one of the papers that are dropped off at my doorstep—the tabloids have a hell of a lot of movie buzz! Let's be honest, I'm lazy! I'm not about to travel for miles to catch a movie on a day off. The papers help me decide on a movie that I'd like, and that's also playing at a theatre close to home.

Time taken: 40 minutes

To be honest, surfing online for reviews seems sort of strange. I had to search for some sites and soon settled on www.mrqe.com and www.nowrunning.com to read and make my choice. Though theatres and timings were available here too, they're only useful if you live in a metro. People living in small towns are better off with local papers.

Time taken: 1 hour

3

Saturday morning! I woke early to read some of the reviews in the papers. National papers wait for their Sunday editions to have their say—a day too late for me. Newspapers, I found, contain very opinionated reviews, which are more entertaining than informative. Anyway, I made up my mind and called the advance booking counter.

Time taken: 20 minutes

The Net may not be very helpful for timings of theatres in smaller towns, but it beats the newspapers hollow with other features: I found movie trailers, which went a long way in helping me decide on a movie. Also, the reviews are more informative and exhaustive. Plus there's thousands of critics, and publishing space is cheap online!

Time taken: 30 minutes

4

All right! The tickets were booked, the popcorn was bought, but my friends were late! While I waited, I realised that with newspapers, you form your opinion based on stuff you've read throughout the week, rather than any one review in any one newspaper.

Time taken: 3 hours to watch the movie; for this insight into my thinking: nothing

Saturday came again, and all I had to do was make sure my friends were on time. I'd even e-mailed them the links to the trailers to entice them to not want to miss the beginning.

Time taken: My friends were on time, so, nothing

Total Time Taken: 1 hour 2 minutes



Total Time Taken: 1 hour, 30 minutes

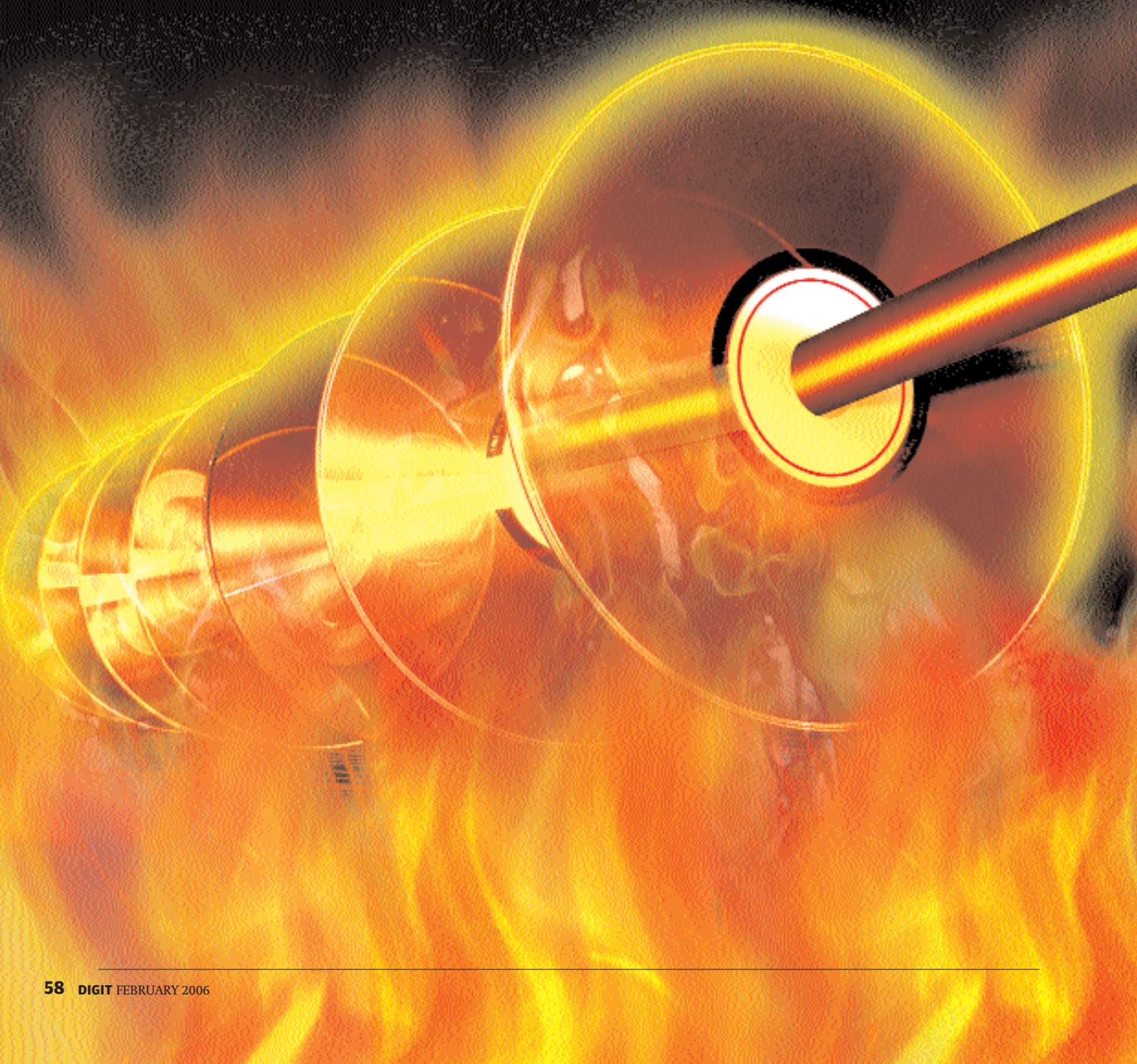


**AND
THE
WINNER
IS...**

The Tech Way rules! Newspaper reviews are entertaining, but you've got to subscribe to the views of the same reviewers every week. Although the newspaper is a familiar constant in our lives, it leaves much to be desired when it comes to stuff like reviews and other info. Online, there are

multiple reviews to read and choose from—not to mention the advantage one has with the trailers. In addition, if you were to choose a movie in its second week, the Net is a definite time saver. Next time round, if I had fifteen minutes in which to decide on what movie to watch, I'd definitely go online!

ROAST 'EM GOOD ANIONS



It's all well and good to go out and buy the best DVD-writer, but what use is it if you're not using the most powerful application to power them? We've tested eight of the best disc burning software for both Windows as well as Linux

Anup Nair

DVD and CD writing software go hand-in-hand with DVD-Writers, which we've also tested this month. If you're planning on getting a DVD-Writer, you'll need software to complement it. Windows XP does come with a CD-Writing wizard, but it cannot burn to DVD (it can't create a VCD or bootable CD either, for that matter).

You're probably aware of Nero Burning ROM—it's packaged with most CD/DVD-Writers here in India. And you're probably not aware of the alternatives. There are several, and here, we present a comparison of six burning software packages—including the well-known Nero, of course. All these are available easily off the Internet.

Some time ago, CD burning software were meant solely for the purpose of recording CDs, but these days, they're coming bundled with additional software such as media players, video encoders, audio rippers, image creators, and more. They also support many data formats (DVD±R/RW, DVD-RAM, dual-layer, ISO, UDF, HFS, etc.) and hardware compatibility is not an issue any more. A burning software can now replace several other software; for instance, you don't need image creators such as WinISO or Alcohol—most CD-Writing software now have a bundled application for the same purpose.

In this test, we've also featured two Linux-based burning software. Open source's baby K3b and NeroLinux lock heads in the Linux segment. And for Windows XP, we have Disc Master 2, Easy Media Creator 8, Nero 7 Premium, NTI CD&DVD Maker, RecordNow! Deluxe, and CyberLink's Power2Go.

BURNING SOFTWARE FOR WINDOWS XP

Ahead Nero 7 Premium

Bid adieu to Nero 6, and make way for the new Nero 7 Premium! The new version has "feature-rich"

written all over it. For example, it comes with Nero Home, a media manager to manage your entire multimedia collection.

Features

Nero has all the features you can think of! This is a fully loaded software—Burning ROM 7, WaveEditor3, Vision 4, Recode, ShowTime 2, PhotoSnap, CoverDesigner 2 and more figure on the list of features.

There are two aspects to any burning software—its core functionality and the bundled features. We can assure you that Nero doesn't lack in either department. Features such as multi-session, overburning, disc image recording, dual-layer DVD support, and support for burning other media formats such as VCD and video DVD—they're all there. Well, Nero can't write WMA CDs, which is hardly important since most players, at least in India, are mostly designed to play back MP3 discs. But still, Easy Media Creator 8 supports all three types—WAV, MP3 and WMA.



Nero StartSmart is a wizard by Nero that displays all the utilities and burn projects at once

Packages similar to Nero WaveEditor 3 and SoundTrax 2 for audio editing, Nero PhotoSnap for picture editing, and Nero ShowTime are available in other burning software as well. But with Vision 4, Nero has inherently enhanced the capability to handle recording of video files in different formats. You no longer need separate software—it's all bundled in Nero 7 Premium.

Nero also allows video capture

from a device such as DV cam to DVD video format and then burning of the file to DVD media with Burning ROM. You can also create images of a CD or DVD, and also mount them on Nero Image Drive, a virtual CD/DVD drive.

Ease Of Use

Installation is easy, and if you don't want to install certain components, you can choose the custom install option. Nero 7's interface is very similar to that of its prior versions—there are only a few minor changes.

The Start Smart Wizard introduces a newbie to the world of disc recording. There's no way you can go wrong if you use the Wizard!

In Nero, all options are always listed, and you're guided at every stage; right-clicking on certain buttons and icons in the main interface displays an explanation. If you need documentation, though, you'll have to visit www.nero.com/nero7/eng/FAQs_Manuals_Helpfiles.html.

Performance

Nero has always been resource-hungry. Many people restrain themselves from doing multiple tasks on their machines while Nero is burning a disc. This may, in fact, be good practice if you don't have top-of-the-line hardware. If you have, say, 128 MB of RAM, you could just end up with a cyclic redundancy error if you do many other things while Nero is doing its job.

When you run Nero, the memory usage shoots up by a hundred megabytes or more; refer to the table for details. This is one area where Nero must improve—there happen to be software in this test that use a minimum of resources.

Site:

www.nero.com/nero7/eng/index.html

CyberLink Power2Go

CyberLink's Power2Go supports all types of media formats. On the regular features front, it has everything to give Nero and CyberLink tough competition.

Features

Power2Go claims support for Blu-Ray, as does Nero. But here, the support is more prominent: the interface sports three tabs—CD, DVD, and Blu-ray! It also supports creation of WMA music CDs and DVDs in addition to MP3 and WAV (the latter not on DVD), a feature not common to the other applications, except Easy Media Creator. As for the other necessary features, they're all there. The only notable package that comes bundled is the audio ripping tool.

Ease Of Use

We thought CyberLink would extend their typical PowerDVD skinning to Power2Go—that, thankfully, is not the case! CyberLink has adopted a simple design, which reduces the load on system memory.

The various burning formats such as data, audio and video were well sorted, and a newbie can use this software with ease. There's a neat 'Utilities' section that features disc image burning, audio ripping, and the audio converter. However, it does not provide configuration options—such as setting the drive's write speed and allowing multi-session—when burning a disc image.

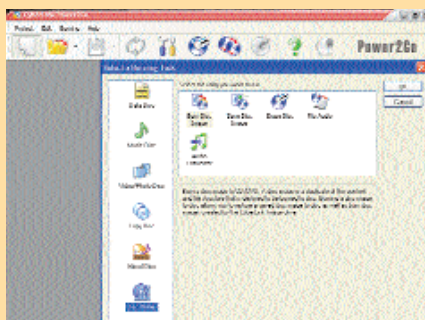


Image burning and Audio Ripping tools in CyberLink are located under Disc utilities

Performance

Power2Go does not tax the system like Nero does. The memory usage and CPU usage were surprisingly moderate, allowing a user to run other applications such as a movie player while burning media. Along with Disc Master 2, Power2Go was the best when it came to the time taken to burn a CD with 690 MB of data.

Site: www.cyberlink.com/multi/products/main_24_ENU.html

InterVideo Disc Master 2

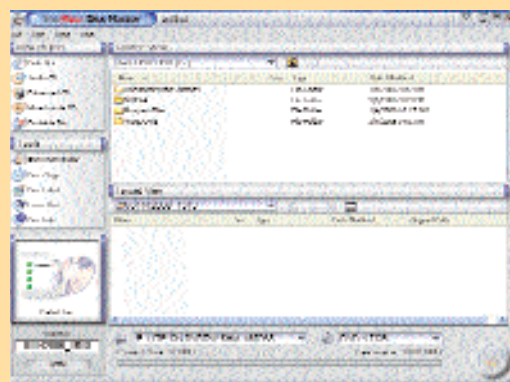
InterVideo's Disc Master 2 is a very mediocre application with respect to the interface and content. As a saving grace, it doesn't burden the system too much.

Features

This application lacks the ability to create video discs and MP3 DVDs, which we believe is a mandatory feature for burning software. Creation of a disc image is also not possible; Disc Master 2 is the only application in this comparison that didn't feature this tool. On the brighter side, it has many necessary features, such as image burning, creation of bootable CDs and DVDs, and dual-layer support. It also supported multi-session and overburning.

Ease Of Use

A straightforward interface lists all the necessary tasks related to burning on the left pane. The right half is the drag-and-drop interface,



Disc Master sports a very simple and easy to use interface that anybody can understand

How We Tested

The Test Machine

The PC on which we tested the CD/DVD burning software was powered by an AMD 64 3000+ (socket 754) on an MSI K8T Neo motherboard with 1 GB of Corsair DDR 400 RAM.

The operating system we used was Windows XP (32-bit) with Service Pack 2. Anti-virus software (Norton AntiVirus 2005) was also installed to give the test machine a realistic environment—that of a regular personal computer. The LiteOn Super AllWrite DVD-Writer (model SHM-165P6S) was used as the media writing device.

Other hardware included an nVidia GeForce FX 5950 (256 MB) card and a Seagate Barracuda hard disk.

We tested the Linux-based software on custom-installed Fedora Core 3 using the same machine as above. No anti-virus software was installed on the Linux machine.

Both software—K3b and NeroLinux—operated in the GNOME environment of Fedora. The test machine was made to dual boot Windows XP and Fedora Core 3.

Features

We separated disc burning-related features from additional utilities such as media players. This ensured that priority was given to the purpose for which the software is implemented. A higher weightage was given to features than additional packages.

Of course, a software that had extra utilities in addition to exceptional recording/burning features would win over the rest.

Ease Of Use

Ease of use is one of the most important criteria when considering burning software, and considerable consideration was given to this aspect. The installation of Windows-based software was easy in all cases, and one cannot really differentiate between software based on the installation Wizards.

The story is quite different when installing Linux-based software. The installation patterns of the Linux software were different from each other. Software that installed from package managers such as RPM and DPKG was scored over those that installed from a tarball (.tar.gz, .tar.bz2). Other parameters considered were the user interface, Wizards for burning etc., and the file browser.

Performance

For Windows-based software, the page file usage was considered as memory consumption, while Fedora indicated RAM and swap file usage separately.

The idle state in both cases is the record of the memory consumed when no application is running (except for the normal process and services running on an operating system). The CD/DVD burning application was made to run with Task Manager (Windows XP) or System Monitor (Fedora Core 3) in the backdrop. The peak memory usage during the recording/burning was recorded as the burn state consumption. The difference in the value of the two states gives (approximately) the memory consumed by the CD/DVD burning application.

The time taken to burn a 690 MB data CD and a 550 MB disc image (ISO) were also noted as performance parameters.

which includes the file browser and the area to where you drag and drop the files to be burnt. A Wizard is conspicuously absent in the interface, but strictly speaking, Disc Master 2 doesn't need one.

Performance

Memory usage was under 30 MB during the burn process, and Disc Master 2 (along with Power2Go) clocked the fastest time for burning a data disc.

Site: http://intervideo.com/jsp/DiscMaster_Profile.jsp

NewTech InfoSystems NTI CD&DVD Maker 7

NTI CD&DVD Maker has always been known for its ease of use. The last time we did a review and comparison of burning software, NTI gave stiff competition to the then winner Nero 6 Ultra in the ease of use and features departments. Does it still stand up to the competition?



The interface of NTI CD&DVD Maker sports Mac OS-like skin and it was difficult to locate the Image burn task

Features

It is hard to pinpoint a missing feature here. In the table you'll notice that CD&DVD Maker 7 gives Nero and Easy Media Creator a tough challenge. The only area it missed out on was in the ability to create a Music DVD. WMA music CDs are supported in CD&DVD Maker, though.

CD&DVD Maker is sparse in the additional package department; it bundled only the important applications—the AVI to MPEG converter, audio ripper, audio editor, and a few others.

Ease Of Use

The interface bears a strong resemblance to Mac software. It is well supported by a simple Wizard that guides you through

all the steps necessary to burn your desired project. The only area where we had to work around a little bit with the interface was to burn a disc image. Otherwise, the interface is pretty straightforward, and so is the installation.

Performance

CD&DVD Maker 7 did not impress us performance-wise. It taxes the system memory (albeit a little less than Nero does).

Site: https://secure.ntius.com/esdsoft/cdmaker_v7_full.asp

Sonic/Roxio Easy Media Creator 8

The dark horse in our comparison was Roxio's Easy Media Creator 8. Roxio has been bought over by Sonic Solutions, and the effect is showing up in this suite.

If you thought Nero was a complete solution, you might feel sorry for not having known about Easy Media Creator 8. But you can't be blamed; Sonic Solutions and Roxio do not provide a demo or a trial pack. All other manufacturers do.

Features

What would you call a software that has all the features you'd want? We call it Easy Media Creator 8! This software is not only feature rich but also provides loads of additional packages. The only two areas we got a chance to type in "absent" in our comparison chart were Blu-Ray support and UPnP streaming... but do you really need these as of now?

Ease Of Use

The installation Wizard is almost identical to that of Nero 7—you'll need to choose custom installa-

tion if you want to control the applications this mammoth product will add to your system.

The interface is fully backed by a Wizard that is integrated with the main application; it is not a separate dialog box guiding you through the various stages of a burn project. The left pane displays various categories under which different burn projects are classified. On the lower left corner, a disc icon shows the used disc space as a pie chart, and the estimated remaining space is displayed next to it.

Performance

The application consumes about 100 MB of system memory when loading, and then settles down to 80-odd MB. But try burning a CD, and you'll see memory usage drop—sometimes it doesn't consume any! Even if Easy Media Creator uses virtual memory for its burning, it would probably just take a few extra seconds to burn a media—and you'll have free RAM to run other applications simultaneously.

Site: www.roxio.com/en/products/index.jhtml

Sonic/Roxio RecordNow! Deluxe 7

Looking for a software that is strictly meant for burning CDs and DVDs, and that doesn't load your system with packages you may never use? Sonic Solutions' RecordNow! Deluxe 7 is the answer: all it does is burn!

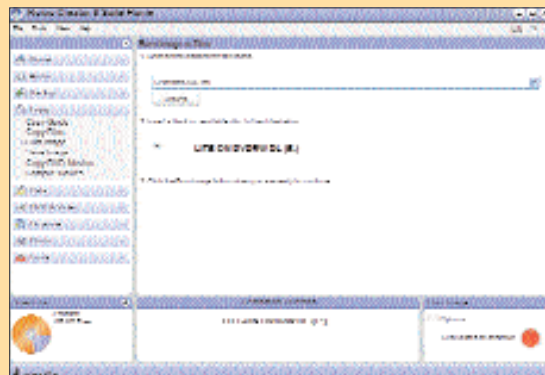
Features

Most burning features are supported in RecordNow! Deluxe. But it lacks a little on the DVD burn features available in its cousin, Easy Media Creator 8. Other important features such as overburning, multi-session and image burning are supported.

In the additional package department, RecordNow! provided only basic, useful and frequently-used apps such as a CD label creator, audio ripping, and a Photo Slide Show disc wizard.

Ease Of Use

We found the interface very compact and not very informative. It looks more like audio player software; the tabs on the base open up a hideable menu that reveals all the burn-related features. The tab classifies the



In Roxio Easy Media Creator 8, used disc space is shown as a shaded region on a disc symbol at the lower left corner

ISO9660 (CDFS): The most commonly used file system for CD and DVD is ISO9600. It has certain limitations that led to the development of new file systems. The limitations of this file system were short file names and eight-level-deep file structures, which means that you can create only seven sub-folders under a root. The newer file systems resolve this issue.

We cannot totally do away with CDFS, since you'll need it to view the contents of a CD in DOS-mode or older Mac, Sun or Linux systems. However, there are extensions to ISO to deal with its limitations. These are Rock Ridge and Joliet.

Rock Ridge: The Rock Ridge Interchange Protocol (RRIP) assigns an extension to the ISO9660 standard for CD-ROM that not only lifts the ISO9660 restrictions, but also allows *nix-style symbolic links and special files to be stored on a CD. The volume descriptors are not affected by this extension, so it is cross-platform.

Joliet: Developed by Microsoft, this is an extension to ISO9660 that allows Unicode characters in file names. It also allows long file names just like Rock Ridge, but the limitation is that only Linux and FreeBSD among the POSIX systems can recognise Joliet CDs.

Hybrid CD: In order to eliminate cross-platform issues when dealing with CD-ROM/RW content, the Hybrid class was designed. It is a mixture of three file systems on a single disc—ISO9660/RR,

Joliet and HFS. Such CDs are accessible under DOS, *nix, Macintosh, and Windows 9x/NT. It also allows more than one session on a disc, which means that a recordable CD can be used more than once—provided there's remaining space, and that the disc wasn't closed in the previous burn session.

HFS: HFS is a file system developed by Apple computers for computers running Macintosh operating systems. It was originally designed for floppy disks and hard disks, but it can now also be found on CD-ROMs. It permits file names up to 31 characters, and supports metadata (information about data content) on a CD. It is a well-documented file system, and so many workarounds are available to access HFS-based CDs on other modern operating systems.

UDF: Universal Disk Format (UDF) is a relatively newer file system for CD and DVD that is developed and managed by the Optical Storage Technology Association (OSTA), aimed at creating a platform-independent media format.

It is based on the ISO 13346 (EMCA-167) standard, and it is considered the successor to the ISO 9660 (CDFS) format. UDF supports advanced features along with Long and Unicode file names, deep directory trees, large (64-bit) file sizes, access control list, and named streams.

However, Windows XP's inbuilt CD-burning feature does not support some UDF features such as named streams and access control list features.

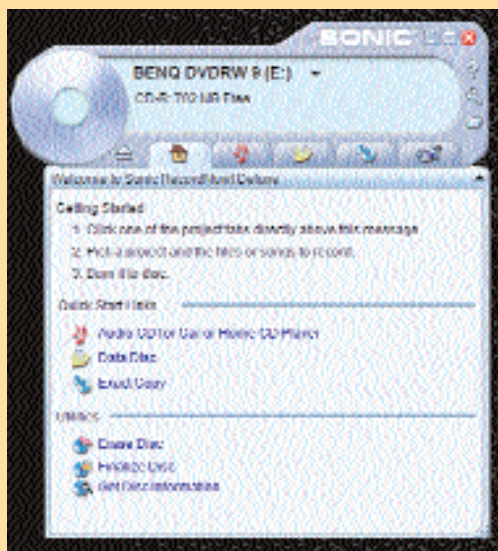
UDF is required by DVDs to contain MPEG audio/video streams. It is also used by CD-RW in the packet writing process, which ensures efficiency in terms of disk space required and time.

TAO: Track-At-Once (TAO) is a method of disc writing by which the laser writes data on a disc track-by-track. The laser of the device goes on and off between these tracks. If an audio disc is written using TAO, it will introduce rather long gaps (3 or 4 seconds) between audio tracks, which cannot be reduced by the burning software.

DAO: In Disc-At-One, one or more tracks are written continuously one after the other; the laser remains on till the process is complete. This method is ideal for burning audio discs, and most CD recording software use it by default when a user wants to create an audio CD. It is also an ideal option for burning disc images such as *.ISO.

CRC (Cyclic Redundancy Check): A CRC error happens when a data check at the destination does not match the original data. This error is commonly seen when writing CDs and DVDs. You'll also see it in downloaded files and corrupt zipped files.

When data is transferred between a source and a destination, a CRC value is given to a block of data. If something goes wrong with the transfer, the CRC sent at the source will not match with that at the destination. When this happens, the OS returns a CRC error.



The interface of Sonic RecordNow! is so compact that it looks more like an MP3 playback software like Jet Audio rather than a burning software

various burn tasks into audio, video, data, etc. You can choose to drag and drop the files you want to burn using Windows Explorer, since the file browser is as compact as the interface. The interface is intuitive - drag MP3 tracks onto the disc symbol on the interface, and it will automatically open the MP3 CD creator. You can also choose to change the volume levels of the sound tracks you add.

Performance

RecordNow!, too, was very low on resources right from the opening of the application to the end of the burn process. The time taken to record disc images and data were average. The readings we obtained were just the values we expected from an application with such a modest interface.

Site: www.roxio.com/en/products/index.jhtml

So What Software To Buy?

Deciding the winner meant choosing between Nero 7 Premium and Sonic/Roxio Easy Media Creator 8. The other products in close competition were NTI CD&DVD Maker 7 and Cyber-Link's Power2Go. The latter is a better choice for its simplicity,

and it has almost all the features that CD&DVD Maker has. RecordNow! and Inter-Video's Disc Master were left behind in the race.

Our winner by a very small margin of 1.5 points is Easy Media Creator 8. That doesn't mean Nero users should switch right away! The winner scores over Nero for its features and performance alone; Nero has a few extra bundled utilities, and most importantly, it is much easier to use.

Easy Media Creator wins in the performance department by a mammoth margin, and we've said earlier, you can run other applications without the fear of ending up with a corrupt disc.

BURNING SOFTWARE FOR LINUX

Most power users of Linux distributions are aware of and use the command-based CD burning utility. Newbies to Linux are not aware of this feature, and even if they are, not many know how to use it.

The command is "cdrecord", and you can do a "man cdrecord" to figure out how to use it. We've covered how to use this command in the *Tips & Tricks* section in this issue.

For now, we look at how two of the best CD/DVD burning software fare.

Many software are available on the Internet for burning CDs and DVDs, but they either fail with dependencies during installation, or they use the inbuilt cdrecord and mkisofs commands (the GUI front-ends). Therefore, we take a look at the popular K3b and the challenger, NeroLinux.

Ahead Software NeroLinux 2.0.0.4

Nero is a very popular software for Windows. Ahead also introduced a version for Linux some time ago,

but that didn't gain as much popularity as was expected. This could have been because it is a *licensed* software that you needed to buy for using on a *free* operating system! However, you were allowed to download and install the trial version, which has no feature limitations. The same is the case with the latest version of Nero for Linux, NeroLinux 2.0.0.4.

Features

If you've used Nero on Windows and happily installed the Linux version, it'll come as sad news that NeroLinux is not as feature-rich as its Windows counterpart. It can't even burn an audio CD. It can write data CDs and DVDs, CD/DVD images, and create bootable CDs and DVDs. Additional burn features include multi-session, overburning, and drag-and-drop. It can also create images of CDs and DVDs.

Ease Of Use

Installing applications on a Linux box is not straightforward, and lately, with all the changes that Linux has undergone, it has become all the more difficult. Considering this, Nero has made life easier, especially for those new to Linux.

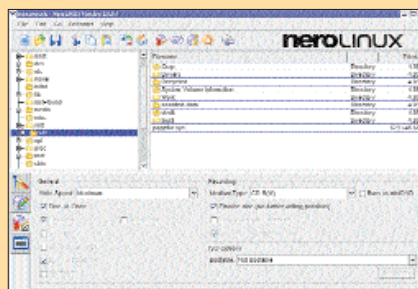
Nero has compiled the software in two popular packages - DPKG for Debian (also Knoppix and Ubuntu) users, and RPM for Red Hat/Fedora (SuSe, Mandrake, and many more based on these).

Installing NeroLinux is easy. All you need to know is the command, and of course, the serial key; remember, this is a licensed software, not freeware. The latest trial version will work till the end of January. Ahead might extend this period or come up with a newer package!

We downloaded the RPM package, which is 10 MB large. Open the Konsole or Gnome terminal to run the following command:

```
#rpm -ivh nerolinux-2.0.0.4-x86.rpm
```

You may have to switch to root user if you are not logged in as one. You may need to reboot the machine to finish the installation. On logging back in, you'll see that Nero comes under Hat (Start Menu button, RedHat) > Sound and Video > NeroLinux.



NeroLinux-burn - The interface of NeroLinux is mediocre as compared to both Nero-Windows and K3b

1 Col Ad



Scoreboard – FEBRUARY 2006 Burning Software FEBRUARY 2006								
OS Type	Linux CD Burning Software				Windows Burning Software			
Name of the Company	K3b.org	Ahead	New Tech Infosystem	InterVideo	Sonic/Roxio	CyberLink	Sonic/Roxio	Ahead
Burning Software	K3b 0.12.10	NeroLinux 2.0.0.4	NTI CD&DVD Maker 7	Disc Master 2	Easy Media Creator 8	Power2Go	RecordNow! Ver. 7	Nero 7 Premium
Ease of Use								
Installation (Scale of 5)	3.75	4.5	4	4	4	4	4	4
Interface (Scale of 5)	4	3.5	3.5	4	3.5	4	2.75	4
File Browser/Layout (Scale of 5)	4	4	4	3.75	3	4	2.75	3.75
Burning CD Images	4.5	3.75	2.5	3.5	3.75	3.25	3.5	3.75
Wizards (Scale of 5)	NA	NA	4	3	3.5	3.5	3	4
PERFORMANCE								
Memory usage (idle) in MB	91.2	104	238	238	224	229	213	239
Memory usage (burn) in MB	222	252	335	266	232	264	234	389
Consequent Memory Usage	130.8	148	97	28	8	35	21	150
Duration to burn 545 MB ISO (in secs)	138	128	148	145	143	152	142	137
Duration to Burn 691 MB Data (in secs)	168	164	172	162	176	162	172	172
Features								
Media Formats								
Audio CD (MP3, Audio, WMA) (Y/N)	4, 4, 6	6, 6, 6	4, 4, 6	4, 6, 6	4, 4, 4	4, 4, 4	4, 4, 4	4, 4, 6
DVD Music (MP3, DVDAudio, WMA)(Y/N)	6, 6, 6	6,6,6	6, 6, 6	6, 6, 6	4, 4, 4	4, 6, 4	6, 6, 6	4, 4, 6
DATA CD/DVD (Y/N)	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4
Video CD (VCD, SVCD) (Y/N)	4, 4	6, 6	4, 4	6, 6	4, 4	4, 6	4, 6	4, 4
Video DVD (DVD, VR) (Y/N)	6,6	6, 6	4, 6	6, 6	4, 4	4, 6	6, 6	4, 4
Image Burn (CD, DVD) (Y/N)	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4
Bootable (CD, DVD)	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4	4, 4
Dual Layer	4	4	4	4	4	4	4	4
Other								
Multi-session	4	4	4	4	4	4	4	4
Drag-n-Drop	4	4	4	4	4	4	4	4
Over-Burning Support	4	4	4	4	4	4	4	4
Create Images of Media	4	4	4	6	4	4	4	4
Additional Packages								
Video								
DivX-to-DVD (or AVI to MPEG)	NA	NA	4	6	4	6	6	4
Video Encoding	NA	NA	6	6	4	6	6	4
DV Cam to DVD Burn	NA	NA	6	6	4	6	6	4
Movie Player	NA	NA	6	6	4	6	6	4
Other								
Backup tools	NA	NA	4	6	4	6	4	4
CD Label Creator	NA	NA	4	4	4	6	4	4
Audio Ripping Tool	4	6	4	4	4	4	4	4
Audio Capture	NA	NA	6	6	4	6	6	6
Audio Editor	NA	NA	4	6	4	6	6	4
Photo Slide Show Disc	NA	NA	4	6	4	6	4	4
Virtual Disc Drive To Load Disc Image	4	6	6	6	4	6	6	4
Media Manager	NA	NA	6	6	4	6	6	4
UPnP Streaming	NA	NA	6	6	6	6	6	4
Blu-Ray Capability	NA	NA	6	6	6	Y	6	4
Tallying the Scores	69.49	55.88	70.36	60.28	81.44	71.23	64.11	79.95
Ease Of Use	79.5	65.25	72.5	74	68.75	76.25	60.5	77.75
Performance	61.52	64.47	59.13	64.82	74.10	62.60	65.08	60.89
Features	76.67	60.00	81.67	58.33	100.00	86.67	75.00	93.33
Additional Packages	15	0	50	15	90	15	35	95
Cost	100	48.16	63.92	63.98	39.98	80.00	63.93	45.67
Price	FREE	\$19.99 (Rs882.50)	\$49.99 (Rs2206.50)	\$49.95 (Rs2204.50)	\$79.95 (Rs3527.50)	\$39.95 (Rs1763)	\$49.99 (Rs2206)	\$69.99 (Rs3088.50)

The interface is very similar to Nero Burning ROM, with a few changes. On the lower half are vertically arranged tabs that can be used for changing the settings. The interface is best described as modest.

Performance

NeroLinux is a whole ten seconds faster than its Windows counterpart in burning both data CDs and disc images. It is also a little faster than K3b. But it taxes the system RAM pretty much to the same level as does the Windows version.

Site: <http://ww2.nero.com/us/nerolinux-prog.html>

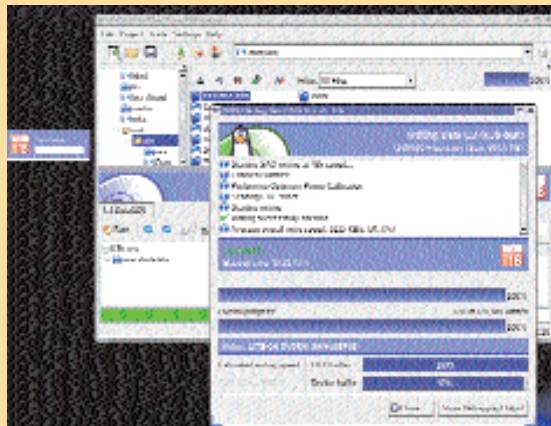
K3b.org K3b 0.12.10

K3b is open source. It's an application suited for the KDE environment, but it works well on GNOME as well. It is the top-seeded CD/DVD writing tool with plenty of features, provided your system is capable of handling it. That means that to have utilities such as the video encoder, your OS should have the library files to support the DVD and AVI/MPEG-4 formats.

Features

K3b lets you burn data CDs and DVDs, MP3, and audio CDs. It can burn video CDs as well. We liked the options K3b provides for erasing CD-RWs: you can choose to perform a Fast erase or a Full erase, and best of all, you can just erase the last recorded session!

Other nifty features are the audio ripping tool and the disc image loader. You can use the disc image loader to load and view the contents of an ISO file. The same can be done by use of



A tiny rectangular box stays on top of other applications indicating the progress of disc writing in K3b

commands, but the GUI and K3b makes the task very simple. Need to rip a DVD movie to the AVI format? The ripping tool for DVD is just a front-end, so you'll have to download and install the necessary source object files (*.so) to get rid of dependencies, if any. Thereafter, the task is pretty simple.

Ease Of Use

When it comes to installation, K3b will give a new Linux user a horrid time! The installer comes as a tarball, which means an archived and compressed (.tar.gz or .tar.bz2) set of files from which you need to configure and install the application. Just be prepared to do some reading, and eventually, learning! The advantage of a tarball is that it can be installed on any Linux distribution.

To install K3b, first uncompress and untar the downloaded file with one of these commands, depending on the type of file:

```
#tar -zxvf <filename>.tar.gz
or
#tar -jxvf <filename>.tar.bz2
```

Now change your directory to the directory where the files are uncompressed and untarred (the above command does both these functions) and run the configure script, which is `./configure.sh`. Always read the readme file before jumping to the configuration process.

If the configuration runs with out any errors, you might have a successful installation.

The entire installation process takes a long time, but the outcome is software best configured for your system hardware, which can't be achieved by ready-made installers.

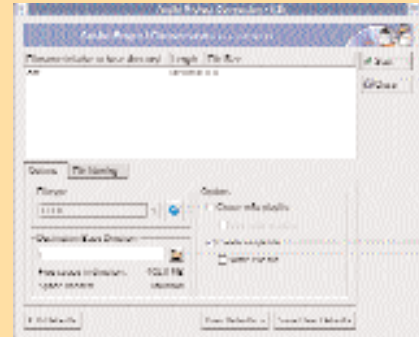
The interface looks good, and has a Wizard at the start of the application, displaying different burn projects.

An easy file browser is in the upper half of the interface, and the details of the burn project are below it. K3b displays a tiny icon in the corner of the screen showing burn progress.

The feel of K3b is undoubtedly better than that of NeroLinux, and is even better than that of some of the Windows software.

Performance

K3b consumes less system memory than NeroLinux, but



An audio converter is available in K3b and so is DVD ripper only if dependencies are cleared

takes a few extra seconds to complete a burn project.

There isn't a major difference in the performance levels of the two packages.

System resource usage is within prescribed limits. Neither application malfunctioned in our tests - this indicates they are stable releases.

Site: <http://k3b.org/>

Nero Or K3b?

K3b wins the race hands down—it's way ahead in terms of features! We don't understand why Ahead is distributing a paid version of Nero for Linux with such few features.

The only factor in favour of Nero is ease of installation. But K3b also has distribution-specific installer packages, so eventually, there's not much point using NeroLinux. Hats off to K3b.org and the open source community for their efforts!

In Conclusion

We hope we've alerted you to the fact that Nero is not the be-all and end-all of burning software. We've also tried to get across the point that you can do a lot more with burning software than just burn.

Memory usage is an important point—software that takes up less memory while burning is preferable, since you probably tend to do other things while a CD or DVD is burning.

You'll probably see Blu-ray and HD-DVD featuring prominently in our tests next time round.

In combination with the DVD-Writers shootout in this issue, we hope we've informed you of all you need in order to create perfect DVDs. So go ahead—organise, compile, burn! ☐

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Clicks 'n' Keys

Fed up of your old keyboard and mouse? We've tested over 50 of both to help you decide on a new set



Imaging Chaitanya Surpur
Photographs Sandeep Patil

Sanket Naik

Whether it's processor speeds, hard drive capacities or sleek displays, almost every computer component has evolved and broken new ground, thanks to constant technological innovations. In contrast, input devices have remained unchanged for nearly two decades—they've seen a few minor cosmetic changes, but no real technological innovations.

It's only in the past couple of years that new technologies have made their way into input devices. With industry bigwigs such as Intel and Microsoft making headway into our living rooms, the need for better human interface devices arises. Recent product line-ups from major input device manufacturers stand testimony to this shift, and reflect their desire to capture new markets.

While Logitech and Microsoft have traditionally been the major players, many small brands have emerged over the years. These smaller brands offer devices at throwaway prices, and make buying decisions difficult. Also, vendors have taken up a solution-centric approach, thereby bundling keyboards and mice as desktop kits. This cuts packaging costs, delivers more value to the customer, and also makes it simple for the customer to choose. Of course, standalone keyboards and mice are still available.

In this comparison test, we tested around fifteen combo kits, fifteen standalone keyboards and 23 mice, from all the major brands available in Indian market. Based on the technology used, the "combo kits" category was classified into Wired and Cordless. The Mice category shows a clear distinction in terms of their usage—for desktops or laptops—whereas the standalone keyboards we received were all wired.

You might ask at this point, "What's the big deal about keyboards and mice?" Well, there's a lot to it! When buying a PC, we tend to pay a lot of attention to the hardware configuration—processor, hard drive, graphics card, etc. Keyboards and mice are generally picked up like potatoes and

tomatoes—we settle for just anything. What people forget is that we interface with our systems using these devices, and these components are therefore the most utilised. Another thing to remember is that apart from being good-looking, input devices have to be comfortable to use, or you're going to end up with aching joints.

You also need to bear in mind that keyboards and mice are rarely ever "upgraded"—they are only changed if they stop working. Here's where we come in—read this test thoroughly and use it to make a good buying decision. Keep in mind, however, that one person's passion can be another's poison, so actually getting a feel for what you're buying is of utmost importance!

KEYBOARDS

The standalone keyboards category covered products ranging from a paltry Rs 260 for the entry-level Genius keyboard to Rs 4,995 for the Logitech Gaming keyboard. Almost all the products in this category were wired.

Features

iBall's Power Key designer keyboard had the most number of features. The keyboard is cramped with extra buttons that give it a "busy" kind of look. The black colour, with the red "i" key, gives it the special iBall treatment. Apart from the standard keys, you get about 32 extra keys for various functions. The keyboard features all the regular multimedia and Internet hotkeys for one-touch operation.

To stand apart from the crowd, iBall decided to integrate keys for controlling MS Office applications—Word, Excel, Power Point, and Calendar. Other standard Windows functions such as Cut, Copy and Paste can also be achieved via dedicated keys. Except for the Office hotkeys, all others work without installing any drivers. The keyboard also has a USB port that you can use to connect other devices, as well as a scroll wheel that blinks different colours while you work.

Similar to the iBall was the Tech-com SSD-KB-990 keyboard. This keyboard is cramped with hotkeys for functions that you might never use—the SSD-KB-990 has 49 extra hotkeys! Apart from the standard, multimedia and

Logitech and Microsoft have traditionally been the major players, but many small brands have emerged, which offer input devices at throwaway prices

Internet hotkeys, the keyboard comes with one touch-keys for Windows Office XP. Tech-com has gone a step forward, integrating a scroll-pad—quite handy in Excel and during Internet browsing.

Most of the hotkeys work without installing the software, but if you buy this keyboard, we'd recommend that you install the bundled software.

Logitech was represented by two keyboards, the standard entry-level keyboard and the top-of-the-line gaming keyboard, the G5. While there is hardly anything to write home about regarding the standard classic keyboard, it happens to be the best vanilla keyboard out there.

The G5 gaming keyboard, on the other hand, is the best standalone keyboard we have come across thus far! It has fantastic build quality, a plush feel, and a host of features to rock your games. There are 18 programmable keys in three modes that give 54 combinations to play around with. The keyboard is backlit and features a button to switch it off. The most interesting aspect of this keyboard is the programmable LCD display—a first-ever for a keyboard! You also get two USB



The display screen of the Logitech G15 gaming keyboard

ports on the keyboard so you can attach other devices. The software bundled with the G5 for programming macros is fantastic—simple and very useful.

Microsoft's Comfort curve 2000 was the only keyboard in the whole test from the software giant. This was the probably the best looking standalone keyboard, not counting the Logitech G5. Apart from good looks and a unique, comfortable design, the Comfort curve

keyboard has standard one-touch hotkeys for multimedia and Internet applications.

Zebronics' ZEB-K500L was the odd one out in this, the stand-alone keyboard category. It is designed to be a slim keyboard, and hence is small and cramped. However, the translucent casing gives it a chic look. It also features a blue backlight, but the white-on-black letters are hard to read in poor lighting conditions, even with the backlight on. Thankfully, there's also a switch using which you can turn off the backlight when it becomes unbearable.

The same design is also available as the ZEB-K500, which has a white translucent body and no backlight.

The Genius SlimStar, as the name suggests, is a slim keyboard that's flat and sleek. Overall, it looks great. It features 12 hotkeys for controlling multimedia applications and Internet functions.

The strong point, however, of this keyboard is its designer

looks; sadly, the same cannot be said about its features. Genius' other entry, the LuxeMate Scroll keyboard, is great as far as looks and product quality are concerned. There is hardly any space between the keys, and it looks like a laptop keypad.

BenQ's A110 is another stylish keyboard that could win an award for design. This keyboard is milky white, and has the looks to entice any buyer, but in terms of features, it's just a vanilla keyboard, and is devoid of any frills.



iBall Power key Designer

Ergonomics

No other keyboard comes close to the ergonomics of Logitech's keyboards. Both the Standard Classic keyboard and the G5 gaming keyboard set the standards for others to emulate. The G5 offers better comfort and uses better materials, and while the entry-level standard keyboard may be devoid of plush feel materials, it still offers the same true tactile feedback necessary for touch-typing. Logitech's Internet keyboard somehow doesn't feel the same; the keys are too soft and often miss keystrokes.

The iBall Power Key Designer comes out good on our ergonomic scale due to its excellent key feedback—it's just a shade behind the Logitech standard keyboard. Also, the placement of the buttons with respect to the home keys is excellent, and reaching them requires minimal stretching of the fingers.

The Tech-Com SSD-KB-990 and SSD-KB-880 have just one

How We Tested

Keyboards Features

Number of keys: This count reflects the number of hotkeys provided with the keyboard, apart from the standard keys it had. These hotkeys included the multimedia keys, Internet keys, etc.

Batteries required: Cordless keyboards require alkaline batteries to run, and we logged the type and number of batteries required. If a keyboard uses AA batteries, the running costs are cheaper compared to keyboards that use AAA batteries. Also, fewer batteries result in lower running costs.

Miscellaneous features: Unique features that deserve attention were logged under this field. Features such as a scroll wheel, direction pad, backlight on/off switch, slots on the bottom of the keyboard for proper wire management, buttons for zoom, etc., were logged here.

Ergonomics

Keys: With respect to the keys, we logged the spacing between the keys, key layout, size of specific keys such as [Enter], [Insert] etc., and, most importantly, the tactile feel they provided. Too soft and too mushy a feel was rated low.

Miscellaneous: Parameters such as the comfort of the palm rest, elevation of the keyboard before and after using the foot pegs, etc., were logged on a scale of five.

Performance

We typed, 10 times, the standard "The quick brown fox jumps over the lazy dog," changing the case to UPPER, lower and Sentence. Then we typed all the numbers and special characters. We used the [Home], [End] and [Delete] keys, and tried the [Page up] and [Page down] keys as well.

Finally, to get a proper feel of the keyboard, we typed a paragraph of around 250 words using each keyboard.

Mice

Mice were evaluated on the following parameters.

Design: An ambidextrous design allows the mouse to be used by left-handed people.

Wired/Cordless: Cordless mice are great for the degree of freedom they allow when working. For daily use, we recommend cordless mice; however, if you are a gamer, the lag associated with cordless mice might not work in your favour—you should choose something like the Logitech G7 gaming mouse instead.

Sensor used: Here we logged the tracking engine used, which includes ball technology, standard LED optics or high-precision laser. The sensitivity and accuracy of the mice decrease in the order of Laser-LED optics-Ball.

Miscellaneous features: Features such as horizontal scrolling, a power switch, a portable USB receiver in the case of notebook mice, and the mouse interface were also logged.

Physical characteristics: Grip, placement of buttons, scroll wheel placement, weight of the mouse, gliding efficiency, etc. indicate the comfort level a user will experience.

Action feedback: Parameters such as the tactile feel the buttons provide, the feel associated with the scroll wheel, etc., were logged.

Performance: For evaluating the performance of the mouse, we used it for two successive rounds of Quake III's DM17 map. The first round was played at 1204 x 768, and the second round was played at 1280 x 1024, to check the difference in sensitivity and the subsequent effect on accuracy.

drawback—the keys feel a bit mushy, and you tend to miss a keystroke or two. Also, the SSD-KB-880 has poor build quality, with rubber buttons for hotkeys without proper legends—easily avoidable.

On the ergonomics front, the Genius KB-12e has much better design than the competition. Though the keys have a soft feel, they offer good tactile feedback, something completely lacking in the other Genius keyboards. The Genius Luxemate scroll has a laptop-type keyboard, not enough spacing between keys, is cramped, and there's a general lack of tactile feedback. The Genius KB-06X, despite being an entry-level keyboard, offers better ergonomics compared to its older sibling, the KB-12e.

Microsoft's Comfort Curve 2000 quite doesn't feel like a Microsoft keyboard. The keys are nicely arranged on a curve for stress-free typing, but are simply too soft and offer no resistance to keystrokes, thus affecting feedback. Apart from this, this keyboard is a wonderful device.

The Zebronic ZEB-K500L has a weird key layout: the [Home], [Page Up], etc., key group is lined up with [Backspace], [Enter], etc., and this leads to mistakes. Very often, when trying to hit [Backspace], you might hit [Home], which can get quite frustrating. Similarly, the [Delete] and [Insert] keys are placed on the bottom row near the Windows key—not easy to reach. Also, since the keyboard has a laptop keyboard feel, tactile feedback is hampered.

Our Verdict

Ideally speaking, Logitech's G5 shouldn't have been featured in this category, but our categorisation criteria dictated that it should. The G5 has fantastic build quality that's seldom seen on a keyboard, and has many features.

Though Logitech has priced the G5 ambitiously, we think the price is a little too high, but not atrociously so—considering the features it offers. The keyboard is a must-have for those who play a lot of RTS games; if you don't, you can afford to look at other keyboards!

Now, out of the rest of the keyboards, iBall's Power Key



TECH-COM SSD-KB-990

Designer comes out tops due to its truckload of features and decent ergonomics. Logitech's Standard keyboard and Tech-Com's SSD-KB-990 tie for second place. If you are on a shoestring budget and want a no-frills keyboard, Logitech's Standard keyboard is the way to go. If loads of one-touch hotkeys is what you want, Tech-Com's SSD-KB-990 is the keyboard to opt for—remember, however, that it's a shade below Logitech's Standard keyboard in terms of ergonomics.

COMBOS

A combo kit is essentially a keyboard and a mouse bundled into a single package. This trend started about a year and a half ago, and the apparent success has motivated every vendor to have a combo kit in their product line-up.

The entry-level kits, due to price constraints, are wired models, whereas the top-end combos are wireless. Of the 15 combo sets we reviewed, five were wired and the rest were cordless. Let's take a closer look at what they offer.

WIRED DESKTOP COMBOS

Features

Most of the wired combos are targeted at entry-level buyers, and hence are anaemic on features. One good thing, though, was the inclusion of optical mice in all the combos—this does away with the routine maintenance problems that plague ball mice.

The first advantage of buying a combo is that you get an aesthetically matched set that looks nice on your desk. As far as looks go, Gigabyte's GKM-10 and Genius EasyTouch Optical II look great in their dual-tone White

and Blue combination. Logitech has gone for an all-black combo, and should complement a black monitor and cabinet system. Zebronic's 911 combo is targeted at gamers; however, the golden black camouflage design with a printed Counter Strike theme makes it look gaudy.

Except for Gigabyte's GK-6PB, all the keyboards offered some extra keys. Logitech's Internet Pro Desktop, Zebronic's 911 combo and Genius' Easy Touch Optical II offered multimedia keys that can launch the default media player, play songs, and perform other functions.

Except for Gigabyte's GK-6PB—a standard keyboard—all the others had one-touch keys for launching Internet Explorer, the default e-mail client such as Outlook Express, and buttons for going back and forth while navigating the Web.

Genius' Easy Touch Optical II has gone a step forward and also offered one-touch keys for accessing My Computer, Calculator, and for putting the machine to sleep.

A palm-rest on a keyboard relieves a lot of wrist stress, and our advice is to buy a keyboard with one. While it is not the only thing to look for in terms of ergonomics, it does help.

Except for the Zebronic 911, all the other keyboards came with a palm rest. Gigabyte's GKM-10 featured a non-detachable palm rest, which is both good and bad—good because it will stay firm and won't move about like the detachable ones do, and bad because if you have a cramped desktop, this will hurt more than help.

The mice that came bundled with these combo sets were standard three-button optical devices. Logitech's offering delighted us with its ambidextrous design and precise track-



Genius EasyTouch Optical II



Scoreboard

Keyboard

Brand	BenQ	Genius	Genius	Genius	Genius	Gigabyte	iBall
Model	A110	KB-12e	Luxe Mate Scroll	KB-06X	SlimStar	GK-8C	Power Key designer
Features	5.95	15.22	16.97	6.65	11.725	6.97	22.68
Looks	4	3	4	2.75	4	3.5	3.75
Number of keys (extra)	Nil	12	12	3	12	3	33
Multimedia keys	Nil	Play/Pause, stop, volume, launch media player	Play/Pause, stop, volume, launch media player	Nil	Play/Pause, stop, volume, launch media player	Nil	Play/Pause, stop, previous, next, volume
Internet keys	Nil	IE Launch, back, forward, e-mail	IE launch, back, forward, e-mail	Nil	IE launch, back, forward, e-mail	IE launch, e-mail	IE launch, back, forward, stop, Favorites, refresh, search, stop
Miscellaneous extra keys	Nil	My Computer, Calculator, Sleep	My Computer, Calculator, scroll wheel, Sleep	Power, Sleep, Wake	My Computer, Calculator, Sleep	Sleep	Log off, My Computer, Calculator, Word, Excel, PowerPoint, Calendar, cut, paste, mark, application switch, close, scroll wheel
Palm rest	6	4	4	6	6	6	4
Indication for Caps, Num and Scroll locks	Yes	4	4	4	4	4	4
Onboard USB ports	6	6	6	6	6	6	Yes (one)
Keyboard Interface	PS2	PS2	USB	USB	USB	USB	PS2
Number of batteries Required	None	None	None	None	None	None	None
Miscellaneous features	None	None	None	None	None	None	A scroll wheel that blinks in different colours
Ergonomics	27.81	31.23	27.54	27.14	26.96	26.06	32.90
Elevation of board	4.25	4	4	4	4	4	3.5
Keyboard layout	4	4	3	3.5	3.5	3.5	3.5
Key response	3.25	3.5	2.75	3.75	3.25	3.25	4
Key spacing	4	3.5	2.75	3.5	3	3.5	4
Wrist-pad comfort	0	4	4	0	0	0	4
Price in Rs	350	500	1000	260	900	550	990
Price Index	14.29	10.00	5.00	19.23	5.56	9.09	5.05
Overall Score	48.05	56.45	49.52	53.02	44.24	42.11	60.63



ing. The mouse bundled with Gigabyte's GKM-10 and Zebronic's 911 combo set offer the same feel as the Logitech.

From a statistical point of view, the Genius EasyTouch Optical II takes the top spot as far as just features are concerned. The Logitech's Internet Pro Desktop Black takes second place.



Gigabyte GKM-10

Ergonomics

The most important ergonomics testing parameter for a keyboard is the tactile feedback it offers while typing. Touch-typists use tactile feedback to tell whether they pressed a key or not.

Apart from the Genius EasyTouch Optical II and Zebronic's 911 combo, all other keyboards provided decent feedback—neither too hard, nor too mushy. Almost all the keyboards had the standard key layout, with enough spacing between the keys. This makes for typing comfort. Also, all the keyboards had perfectly angled palm rests—this helps reduce the stress on your wrists.

Coming to the mice, as we've mentioned earlier, Logitech's mice have the best ergonomics

of them all, which is something we expected. The Zebronic's mouse has a wide base and hence fits snugly into one's palm—this works great when playing games. Also, since it's light, making 180-degree turns to take pot-shots in a game is easily achieved.

Gigabyte's GK-6PB mouse is poor on ergonomics; the scroll wheel is so small, you might have trouble finding it! The clicking action, too, makes an irritating noise.

As a combo, Gigabyte's GKM-10 has the best ergonomics of them all. The bundled mouse is as good as the one from Logitech or Zebronic's, and this makes it a great gaming device. Overall, Gigabyte's GKM-10 takes the top honours in the ergonomics department.

Keyboards FEBRUARY 2006

Logitech Standard Keyboard 9.80	Logitech Internet Keyboard 12.81	Logitech G15 Gaming Keyboard 26.04	Microsoft Comfort Curve Keyboard 2000 10.61	Tech-com SSD-KB-990 20.48	Tech-Com SSD-KB-880 15.79	Zebronic ZEB-K500L 5.95	Zebronic ZEB-K121 8.72
3.5	3	4.5	4.5	3.75	2.75	3.25	3
Nil	8	35	10	49	18	Nil	12
Nil	Play/Pause, volume, mute	Play/Pause, mute, stop, next, previous, volume knob	Play/Pause, volume, mute	Play/Pause, stop, volume, launch media player, next, previous track, mute	Play/Pause, stop, previous, next, volume	Nil	Play/Pause, volume, mute
Nil	IE launch, search, Favo- rites, e-mail	Nil	IE launch, search, back, forward, e-mail	Back, forward, stop, refresh, Favorites, search, e-mail	Back, forward, stop, refresh, Favorites, search, e-mail	Nil	IE launch, e-mail, Favorites
Nil	Nil	18 programmable keys in three modes giving a total of 54 combina- tions, gaming mode switch, backlight toggle switch	Calculator	Word, Excel, PowerPoint, Calendar, cut, copy, paste, mark, back, forward, applica- tion switch, close, scroll pad	My Computer, Calculator	Backlight on/off switch	My Computer, Calculator, sleep
4	4	4	6	4	4	6	6
4	4	4	4	4	4	4	4
6	6	Yes (two)	6	6	6	6	6
PS2	PS2	USB	USB	PS2	PS2	USB	PS2
None	None	None	None	None	None	None	None
None	None	Programmable display LCD	None	None	None	None	None
33.75	32.18	33.75	26.55	30.92	27.27	21.78	27.86
4.25	3.5	4	4	4	4	4	3.5
3.75	3.5	4	3.5	3.5	3.5	2.5	3.5
3.5	3.5	4	2.75	3	3.5	3	3.25
3.5	3.5	4	3.25	3.5	3.5	3	3.5
4.25	3.5	4	0	3.75	0	0	0
385	595	4995	1220	999	499	950	325
12.99	8.40	1.00	4.10	5.01	10.02	5.26	15.38
56.54	53.39	60.79	41.25	56.40	53.08	32.99	51.95



Our Verdict

Minimalistic on features, these sets are for people on shoestring budgets, and offer more than what is expected of them. Taking price into the equation, two wired desktop combos are a hairsbreadth away from taking the top honours: the Genius EasyTouch Optical II and Giga-byte's GKM-10 both make it to the top spot.

We do think the Genius Easy-Touch Optical II has an edge when it comes to features; however, if you value ergonomics, you should opt for the Giga-byte GKM-10 combo set. The Logitech Internet Pro Desktop black is expensive and this affects its final score, however if you can stretch your budget, this set makes for a great black desktop combo.

CORDLESS DESKTOP COMBOS

Features

The cordless desktop combo category consisted of some of the best devices we received for this test. This category was largely dominated by Logitech, with six products of the ten we reviewed. Genius, iBall and BenQ were the other brands that had cordless desktop combos.

We were bowled over by Logitech's products—they have some of the best finishing we have seen thus far. Their new range of products is sleek, aesthetically appealing, and sets new standards in the design department.

The Cordless Desktop S510 Media Remote features a thin,

flat, sleek looking keyboard designed specially to go with an LCD monitor, an optical mouse with horizontal scroll, and a media centre remote control. The set comes bundled with a Media Center application called MediaLife, which allows easy access to media files on the computer—photos, music and videos. Other notable features include, a Zoom button to zoom in and out of pictures, Excel files, etc. Also, the little USB receiver makes it possible to very easily connect to a notebook. If you can do without the media centre remote, Logitech has the Cordless Desktop S510.

The diNovo Media Desktop Laser is another innovative product from Logitech that caught our fancy. It has a keyboard, a separate numeric

pad with an LCD display, and the MX-1000 mouse. It uses Bluetooth for wireless communication between these devices. The keyboard features the standard layout minus the number pad. The number pad is a separate unit so that it can be taken along with a laptop, since laptops don't have number pads. The same number pad unit doubles up as a Calculator, media centre remote via the MediaLife application, and shows the time and date in the normal mode. Logitech also has a non-laser version of the



There's a host of multimedia keys on the MX-3000



The scroll pad and zoom buttons on the Logitech MX-3000 keyboard/mouse combo

same product, called the diNovo Media Desktop.

Apart from these esoteric combos, the Logitech Cordless Desktop MX-3000 laser kit comprises the latest feature-rich keyboard and the MX-600 laser mouse. The keyboard has 32 extra keys that enable one-touch controlling of multimedia functions such as launching the default media player, eject, play/pause, stop, volume control, mute, shuffle, etc.

Apart from these standard features, it also has buttons for recording and burning. On the Internet front, it has buttons for messenger status and Web cam. Furthermore, it also incorporates a scroll wheel with horizontal as well as vertical scrolling—a boon if you frequent Web pages that require scrolling,

or work with large Excel Worksheets. If image editing is your thing, the Zoom and one-touch 100 per cent zoom buttons will come in handy.

The BenQ X-Touch 850 sports a radical design, with the keys laid out on a convex base, helping the hands to easily rest on the keys without creating any stress on the wrists. The mouse, however, isn't the best of the lot, and doesn't go well with the futuristic-looking keyboard.

The combo has been awarded the iF (International Forum Design) design award. Apart from the standard multimedia and Internet keys, the X-touch doesn't come with too many other features. The keyboard doesn't have indication for Caps, Num or Scroll locks—instead, a small on-screen display menu pops up in the system tray, which is rather useless, and irritating as well.

The iBall i-UFO completely stands out in the bunch and will definitely attract mass attention. It features a UFO-shaped wireless receiver with a blue light—very cool. Apart from the standard hotkeys such as those for multimedia and the Internet, the i-UFO comes with keys for launching MS Word and Excel. Bundled with the combo is a strange-looking mouse. The wide scroll wheel provides good comfort though.

The Genius LuxeMate Pro has a low-profile design giving it a sleek look, and a notebook-type, cramped keyboard. However, Genius has taken care not to mess up in terms of quality. The palm rest features a soft rubbery feel that makes it comfortable to use for long hours. Unlike other keyboards that either use alkaline batteries or Lithium-ion rechargeable cells, the LuxeMate pro keyboard comes with recharge-

able NiMH cells. Genius has gone a step forward, incorporating a battery charger in the wireless USB receiver, and the batteries can be charged via the USB ports.

No other keyboard is cramped with features as much as the Logitech MX-3000 laser set is, and there's no wonder it comes out tops as far as just features are concerned. The diNovo Media Desktop Laser set takes second place.

On the software front, Logitech is miles ahead of the other vendors in terms of the quality of software bundled with their products. The SetPoint application is intuitive, simple to configure, and has the best graphical user interface with proper comments and help. Genius, iBall and BenQ do bundle some software, but they will require a thorough overhaul to match up to the simplicity offered by Logitech's SetPoint application.

Ergonomics

On the ergonomics front, the Logitech S510 Media Remote fares well. The keyboard has good tactile feel, but due to the short key travel (the depth to which a key can be pressed), getting used to it will take some time.

The remote is a piece of art and fits in your palm perfectly; all the keys are within easy reach. The only gripe we had with the remote was that the clickable scroll wheel was a little stiff. Coming to the bundled mouse, it is simply fantastic, and will fit perfectly in your palm. The weight bias is near-perfect, and doesn't feel heavy—despite the fact that it uses two AA batteries.

The Logitech diNovo Media desktop laser combo, despite its ambitious design, falls short of delivering the goods. Though the concept is unique, the implementation leaves a lot to be desired. The keyboard is similar in design to the ones seen on any laptop. The short key travel and close spacing between keys often makes typing cumbersome. Also, the left [Shift] is reduced in size, which often results in one's hitting the wrong key. The separate number pad has no issues, but its real-life value is questionable. The MX-1000 laser mouse has no such issues; in fact this



Genius TwinTouch SE Wireless Optical Desktop kit

Bluetooth version feels lighter than the RF MX-1000 mouse.

The Logitech Cordless desktop MX-3000 is ergonomically the best desktop combo of them all. The thoughtfully-sculpted keyboard as well as the MX-600 mouse gives this combo an edge over its competitors. The keyboard does appear a little cluttered, due to the large number of buttons on it.

One of the biggest strengths



Logitech MX-3000

of this keyboard is its key feel and true tactile response—this keyboard is a touch-typist's dream come true. The placement of the scroll wheel makes it possible to lazily browse through documents without extending a finger. The MX-600 mouse has a right-handed orientation, and that will, of course, put off left-handers. This laser mouse tracks true and offers excellent comfort.

As far as the BenQ X-Touch 805 is concerned, the keyboard offers good typing comfort. Due to the curved design of the keyboard, accessing the hotkeys requires some extending of the fingers, otherwise all other keys fall within easy reach. The accompanying mouse has a low-profile design, and hence is quite comfortable; however, it is quite heavy, and requires effort to move around—it's not good for gaming.

The iBall i-UFO comes with a standard keyboard and it's hard to go wrong with such a keyboard. The keys are well laid out and have a good tactile feedback. The elevation of the board is perfect, thus offering a comfortable typing stance. The strange-looking mouse has a low profile, making it quite comfortable, but its bulky nature makes it heavy and difficult to

manoeuvre.

Similar to the diNovo Media laser keyboard, the LuxeMate pro keyboard from Genius also has a notebook-style keyboard and hence has nearly all the drawbacks of that particular design. Also, since the key travel is shortened, the adaptive curve is steep. The accompanying mouse, however, is pretty comfortable.

Overall, Logitech's Cordless Desktop MX-3000 is flawless on the ergonomics front, and rightly deserves to be at the top of the list.

Our Verdict

Before we give our verdict, it would be wise to look at the prices of some of the keyboards. Logitech's diNovo Media Desktop laser turns out to be the most expensive set and retails at Rs 14,495, followed by its non-laser version, which retails at Rs 9,250. The S510 Media Remote and Cordless desktop MX-3000 desktop set retails at Rs 6,995. The Genius LuxeMate Pro and BenQ X-Touch 805 all fall in the Rs 2,500 price bracket.

Products from Genius and BenQ have the price advantage against Logitech; giving a clear verdict is therefore not quite possible.

If you want a reasonably-priced cordless desktop kit, then Genius' Twin Touch SE optical Desktop kit would be it. If you can stretch your budget a little, BenQ's X-Touch 805 will definitely make your desktop stand apart.

If you appreciate quality and don't mind the high but justifiable price tag, Logitech's Cordless Desktop MX-3000 is the best buy you will ever make—take our word for it!



The excellent battery charger provided with Genius LuxeMate pro can charge both AA & AAA size batteries



The lighted scroll wheel on iBall Power Key Designer

MICE

Desktop Mice

Logitech, Microsoft, Genius, Gigabyte, TECH-COM and Zebronics had at least one mouse representing them in this category. While most of them were based on LED optical technology, some high-end stuff from Logitech and Genius used Laser technology for optical tracking. A few mice used RF for wireless communication with the PC, thus providing complete freedom from the boring cord. Let's see what's on offer.

Features

When it comes to features, two mice stand comfortably apart from the crowd. Logitech has again set the standard for others to follow; both its MX-1000 and G7 gaming laser mice are packed with features.

While the MX-1000 had been around for quite some time now and was the first laser mouse to hit the scene, the G7 raises the stakes higher. Talking of features, the MX-1000 has an inbuilt rechargeable battery that lasts at least two weeks on a full charge, and this can be extended further by using the on/off switch. It has eight programmable buttons, and a perfectly sculpted body for great comfort—albeit not for south-paws. Other features include horizontal scrolling, battery level indicator and the application switch ([Alt] + [Tab]).

The G7 has all these features and many more. First, it has dedicated buttons for changing the mouse sensitivity on the fly—very handy for gamers. For example, if you want to snipe a faraway enemy, you can lower the sensitivity so that the crosshair stays steady, and then increase the sensitivity for quick reflex action.

The accompanying software



Combo Kits

Scoreboard

Wired Combo Kits							
BRAND Model	Genius EasyTouch Optical II	Gigabyte GK-6PB	Gigabyte GKM-10	Logitech Internet Pro Desktop black	Zebronics 911 Combo	BenQ X-Touch 805	Genius TwinTouch SE Wireless Optical Desktop kit
Looks	3.5	3	3.75	3.5	2.5	3.5	3
Features	7.23	3.66	5.46	6	3.63	15.76	20.24
Keyboard							
No of keys (Extra)	12	Nil	8	8	8	12	16
Multimedia Keys	Start, Stop, Play/Pause, Volume +/-, Media player	Nil	Stop, Play/Pause, Volume +/- Explorer launch, Back, Forward	Start, Stop, Play/Pause, Volume +/-, Media player Launch	Mute, Stop, Play/Pause, Volume +/-, Media player Launch	Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch	Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch
Internet Keys	Launch IE launch, Back, Forward, Email	Nil	Nil	IE Launch, Email, Favourites	IE Launch, Search	IE launch, Favouites, Search and Email	IE launch, Back, forward, Close, Refresh, Search, Favourites and Email
Miscellaneous Extra keys	My Computer, Calculator, Sleep	Nil	4	Nil	Nil	Sleep and Function keys lock button	Sleep
Palm rest provided	4	4	6	4	6	6	4
Batteries Required (Type)	6	6	PS/2	6	6	2 AA	2 AA
Keyboard Interface	PS/2	PS/2	4	PS/2	PS/2	USB / PS/2	USB receiver
Indication for Caps, Num and Scroll	4	4		4	4	4	4
Miscellaneous features	None	None	None	None	None	None	None
Mouse							
No of Buttons	3	3	3	3	3	3	3
Sensor Used (Optical/Laser)	Optical	Optical	Optical	Optical	Optical	Optical	Optical
Tilt Wheel	6	6	6	6	6	6	6
Batteries Required (type)	None	None	None	None	None	2 AA	2 AA
Power On/Off Switch	NA	NA	NA	NA	NA	No	6
Ergonomics	32.40	32.76	34.34	33.23	32.24	30.42	33.03
Keyboard							
Elevation of board	4	4	4	4	3.5	4	4
Keyboard Layout	4	4	4	4	4	4	3.5
Key Response	3.5	4	4	4	3.5	4	4
Key Spacing	3.5	4	4	3.5	3.5	4	3.5
Wrist pad comfort	4	4	4	4	0	0	4
Mouse							
Grip	3.5	4	4	4	4	4	4
Button Placement	3.5	3	4	4	4	4	4
Click feedback	3.5	3	3.75	3.5	3.5	3.5	3.5
Scroll feedback	3.5	3.5	3.75	3.25	3.5	3	3
Gliding Feedback	4	4	4	4	4.25	3.5	4
Feel (Heavy / light)	Light	Light	Extremely light	Medium	Extremely Light	Heavy	Medium
Price in Rs	780	690	790	1295	750	2700	1625
Price Index	16.03	18.12	15.82	9.65	16.67	8.04	13.85
Overall Score	55.66	54.54	55.62	48.89	52.54	54.22	67.12



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Combo Kits

Cordless Combo Kits

Genius LuxeMate Pro (Rechargeable)	iBall i-UFO	Logitech Cordless Desktop S510 Media Remote	Logitech Cordless Desktop EX110	Logitech diNovo Media Desktop Laser	Logitech Cordless Desktop MX3000	Logitech Cordless Desktop S510	Logitech diNovo cordless Desktop
3.5	3	4.25	3.5	4.5	4.5	4.25	3.75
19.52	16.72	25.32	15.2	27.6	28.08	23.12	19.6
12 Start, Stop, Play/Pause, Volume +/-, Media player Launch	19 Start, Stop, Play/Pause, Volume +/-	18 Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch	12 Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch	9 Play / Pause, Stop, Next, Previous, Mute and volume + / -, Media button	32 Media, Next, previous, Eject, Play/pause, stop, volume knob, mute, remote media player, shuffle, record and burn	18 Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch	9 Play/Pause, Stop, Volume +/-, Next, Previous, Media player Launch
IE launch, Back, Forward, Email	IE launch, Email, Forward, Back, Refresh, Close	IE launch	IE launch, Email Calculator, Back, Application close,	IE launch, Email Calculator, Media	Email, Messenger Status, Webcam	IE launch	IE Launch and Email
My Computer, Calculator, Scro- lling Wheel, Sleep	Word, Excel, Funtion Key Lock and Sleep	Rotate, Zoom +/-, 100% zoom, Sleep	Funtion Key lock	Remote Control	My Documents, My Pictures, My Music, My Videos, Zoom, Scroll Wheel and Funtion keys lock	Rotate, Zoom +/-, 100% zoom, Sleep	Sleep
4	6	4	6	4	4	4	4
2AA	2AA	2 AAA	2 AAA	4 AA	2 AA	2 AAA	4 AA
USB / PS/2	USB	USB	USB PS/2	USB Recevier	PS/2 USB	USB	USB Receiver
4	4	4	4	4	4	4	4
None	None	Media Centre Remote	None	Media Control Pad,	None	None	Separate Num Pad
3	5	3	3	8	10	3	3
Optical	Optical	Invisible Optical light	Optical	Laser	Laser	Invisible Optical light	Optical
6	No	Yes	No	4	4	4	6
2 AA	2 AA	2 AA	2 AA	Internal rechargeable	2 AA	2 AA	2 AA
6	6	4	6	4	4	4	4
30.17	32.29	34.67	34.45	35.28	37.15	34.67	33.23
4	4	4	4	4	4.5	4	4
3	4	4	4	3.5	4	4	3.5
2.75	3.75	3.75	4	3.5	4	3.75	3.5
2.75	3.5	3.75	3.75	3.5	4.25	3.75	3.5
4	0	4	0	4	4	4	3.5
4	4.25	4.5	4.5	4.5	4.5	4.5	4
4	3.75	4.5	4.5	4.5	4.5	4.5	4
3.5	4	4	4.25	4.5	4.25	4	4.25
3	4	4	4.5	4	4.5	4	4
4	3.75	4	4.25	4.5	4.25	4	4
Medium	Heavy	Heavy	Medium	Medium	Medium	Heavy	Heavy
2500	2600	6995	2995	14495	6995	4995	9250
9.00	8.65	3.22	7.51	1.55	3.22	4.50	2.43
58.69	57.66	63.21	57.16	64.43	68.44	62.30	55.26



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Scoreboard

Desktop Mice

Brand Model	Genius Netscroll + superior	Genius Ergo 525	Genius Wireless Traveller SE2	Gigabyte GM-AC	Logitech MX-1000	Logitech G5 Laser	Logitech G7 Laser cordless Mouse
Features	7	8	7.5	4.5	15.625	8.25	16.625
Wired / Cordless	Wired	Wired	Cordless	Wired	Cordless	Wired	Cordless
Sensor	Optical	Laser	Optical	Optical	Laser	Laser	Laser
Design bias	Right-handed	Right-handed	Ambidextrous	Ambidextrous	Right-handed	Right-handed	Right-handed
Number of buttons	10	8	3	3	8	6	6
Horizontal scrolling	6	4	6	6	4	4	4
Batteries required	NA	NA	2 AA	NA	Internal, chargeable	NA	Lithium-ion battery set
Power switch	NA	NA	6	NA	4	NA	4
Portable wireless receiver	6	6	6	6	Wired	6	Wired
Ergonomics	20.94	23.72	18.86	18.51	23.51	24.41	23.46
Grip	4	4.5	4	3.5	4.25	4.25	4
Placement of buttons	3.75	4.25	3.5	4	4.5	4.25	4
Click feedback	4	4	3.75	3	4	4	4
Gliding efficiency	4	3.75	3.75	4	4	4	4
Mouse weight	Light	Light	Heavy	Extremely light	Heavy	Light	Average
Vertical scroll feedback	4	3.5	3.5	2.5	4	4	4
Horizontal scroll feedback	0	3.5	0	0	4	4	4
Performance	23.25	25.13	22.50	21.00	23.81	26.66	25.88
Sensitivity	4.25	4	3.75	3.5	4.25	4.5	4.5
Performance in gaming	3.75	4.25	3.75	3.5	3.5	4.5	4.25
Performance in Excel	3.75	4.25	3.75	3.5	4	4.25	4.25
Performance in image editing	3.75	4.25	3.75	3.5	4.25	4.5	4.25
Price	20.20	10.00	21.05	40.40	3.64	4.00	3.08
Price Index	3.03	1.50	3.16	6.06	0.55	0.60	0.46
Overall Score	54.22	58.34	52.01	50.07	63.49	59.92	66.42



makes it simple to use and configure the mouse. It also comes with two rechargeable Lithium-ion batteries—when one is operating within the mouse, the other can be charged in the USB receiver.

While the first two were cordless, which made them slightly heavy for gaming, Logitech introduced the G5 gaming mouse. This wired version is similar to the successful MX-518 optical mouse that Logitech released a year ago.



Logitech G7 Laser Mouse

Instead of relying on an LED optical sensor, Logitech has opted for laser light, which tremendously boosts its tracking speed and quality. It, too, has the sensitivity changing buttons, but more importantly, you can now customise the mouse for weight as well. The mouse comes with tiny weights that can be arranged in a cartridge which slots into the mouse, thus making it possible to get a perfectly weighted mouse.

Taking cues from Logitech, Genius introduced the Ergo 525 featuring laser technology. The design cues are straight off the MX-1000 and provide the same comfort; Genius has done a good job by offering top drawer quality on the Ergo 525.

This mouse has eight buttons; however, the software application kept crashing our system, and we weren't able to see all it has to offer.

With the RF 1000 Cordless

mouse, Zebronic tried hard to emulate the MX-1000, however it falls short of its goal. Based around optical technology and offering rechargeable batteries, it features nothing unique.

Microsoft's Wireless Optical 5000 has excellent product finish, spot-on ergonomics and good enough features, but seems ordinary in front of the new products from Logitech.

Unfortunately, we couldn't get their new product line, so we'd like to reserve our thoughts on this product, as it wouldn't be a fair comparison.

Gigabyte's GM-AC is a standard three-button LED optical mouse. It's extremely light, and we found it to be good for gaming—except for the sticky scroll wheel. Genius' Netscroll+ Superior is another comfortable mouse with a host of buttons. Unfortunately, though, it features a right-hand biased design.

TECH-COM sported appealing



Desktop Mice

Microsoft Wireless Optical mouse 5000	TECH-COM SSS-OM-311	TECH-COM SSS-OM-312	Zebronic Optical wheel mouse	Zebronic RF cordless mouse
10.875	4.5	4.5	4.5	9.125
Cordless	Wired	Wired	Wired	Cordless
Optical	Optical	Optical	Optical	Optical
Right handed	Ambidextrous	Ambidextrous	Ambidextrous	Right handed
5	3	3	3	5
4	6	6	6	6
2 AA	NA	NA	NA	2 AA- chargeable
NA	NA	NA	Na	NA
Wired	6	6	6	Wired
22.47	20.18	20.00	20.54	18.62
4.5	3.75	3.75	3.75	3.75
4.25	4	4	4	4
4	3.5	3.5	4	3.25
4	4	4	4	3.5
Heavy	Light	Light	Light	heavy
3	3.75	3.5	3.5	3.25
3.5	0	0	0	0
22.65	23.55	21.30	24.00	22.05
4	4	4	4.25	3.75
3.25	3.75	3.25	4.25	3.5
4	4	3.5	4.5	3.75
4	4	3.5	4.25	3.75
2.79	50.13	50.13	80.00	30.77
0.42	7.52	7.52	12.00	4.62
56.41	55.74	53.31	62.87	54.41



designs, but they all were standard three-button LED optical mice with a touch of style.

Ergonomics

As far as ergonomics is concerned, Logitech's mice are definitely the best. The MX-1000 has a good sculpted body for great comfort, but the weight doesn't help it much when working for long hours. The same hold true for the G7 laser mouse; however, the low-profile design does give it a edge over the MX-1000. The G5, on the other hand, is light, has a low profile design, and is comfortable for extended working hours.

The Genius Ergo 525 comes out the second-best in ergonomics. It blends the comfortable design of MX-1000 and the lightness of G5 gaming mouse.

Microsoft's Wireless Optical mouse 5000, too, has a good design that allows the mouse to fit snugly into one's palm. Furthermore, it runs on only

one battery, thus reducing the weight. The buttons are also perfectly placed within easy reach of the thumb. The Genius Netscroll+Superior also offers good comfort for extended use. The buttons are placed perfectly, but can do with slightly better quality. The TECH-COM mice had mediocre ergonomics; however, looking at their modest pricing, they can be forgiven.

Gigabyte GM-AC is a shade better than the TECH-COM products; however, the erratic wheel doesn't inspire confidence while gaming. The Zebronic Optical wheel mouse offers great ergonomics due to its simple ambidextrous shape and standard button placement.

Performance

Logitech's G5 gaming mouse is the best when it comes to performance—whether it is gaming, daily applications or

image editing, it's fantastic on all counts. The laser tracing elevates the performance tremendously and the on-the-fly sensitivity changing works great in games—you do need a little practice. The G7 isn't far behind, it has the same characteristics as the G5, but we somehow preferred the G5. The MX-1000 delivers what's expected of it, however it can't match up to the new gaming mice series.

The Genius Ergo 525 also makes an impact in the performance test we put it through. The laser technology definitely works in favour of this mouse. The Zebronic Optical wheel mouse did well in the gaming and other tests, and looking at the rock-bottom price, we say, buy it!

Our Verdict

Declaring a clear winner in this category wasn't quite easy, especially when one takes price into the equation. If you want a good standalone mouse at rock-bottom prices, it's surely got to be the Zebronic Optical Wheel mouse. If you're looking for the best mouse out there, it's the G7 mouse from Logitech.

Factoring in price brings us to the conclusion that the G5 is what you should buy. If you want a good laser mouse, you should opt for the Genius Ergo 525—it has the best characteristics of the G5 and the MX-1000 from Logitech.

NOTEBOOK MICE

In this category, we had some of the latest mice from Microsoft's stables. BenQ, Genius, Gigabyte and Logitech were the other brands. Two mice—one from Microsoft and the other from iBall—were based on laser technology. All the others featured LED optical technology.



Zebronic Wheel Optical mouse

Features

Except for Microsoft's mice which had four buttons, the rest were a standard three-button affair. Microsoft's Notebook optical 6000 was based on laser technology, and had an innovative design as well. The mouse fits snugly in one's palm, requires just one AA battery, and doesn't weigh much. Moreover, the design is ambidextrous.

The USB receiver snaps on the bottom of the mouse, thus losing it isn't a problem. A fourth button placed near the thumb offers a slick magnifying square, which is useful during image editing for spot

correction. The rubberised surface makes for very comfortable grip.

The same characteristics are seen on the other two Microsoft

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FEBRUARY 2006



Microsoft Notebook Optical 4000

mice as well. The Notebook Optical mouse 3000 is wired, whereas the 4000 offers cordless freedom. An optical tracking engine powers these two mice, as against the laser in the 6000 model. The Intellipoint software works with all the mice, and is simple to use and configure.

Logitech's V200 is the latest from the firm, and sports some of the best finish seen in the category. This mouse uses invisible optics—a point to note, since one might confuse it with laser; there is no red light emanating from the bottom of the mouse. The USB receiver snaps at the base of the mouse—it won't be lost so easily.

Gigabyte's GM-W9C comes with a leather finish and gives a pleasant touch feel. It also has rechargeable batteries that can be charged via the USB receiver or select Nokia chargers. This ambidextrous mouse uses an optical tracking engine, but is quite precise.

Contact Sheet – Keyboards And Mice

Brand	Company	Phone	E-mail	Web site
BenQ	BenQ India Pvt Ltd	022-25705230	SalesEnquiryIn@BenQ.com	www.benq.com
Genius	TRANSTEK INFOWAYS PVT. LTD	9321170002	amit@ttek.in	NA
Gigabyte	Gigabyte Technology (India) Ltd	022-26526696	sales@gigabyte.in	www.gigabyte.com.tw
iBall	Best IT World (India) Pvt Ltd	3081 5100	sales@iball.co.in	www.bestitworld.com
Logitech	Logitech Far East Ltd	022-26571160	kavita_nath@ap.logitech.com	www.logitech.com
Microsoft	Microsoft Corporation (India) Pvt Ltd	0124-5158000	i-ruchga@microsoft.com	www.microsoft.com
TECH-COM	Shree Sagarmatha Dist. Pvt Ltd	011-26428541	techcom@touchtelindia.net	NA
Zebronic	TOPNOTCH INFOTRONIX (I) Pvt Ltd	26616202	zebronic@zebronic.com	zebronic@zebronic.com

Scoreboard

Notebook Mice

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Brand Model	BenQ M101	BenQ M310	Genius Ergo 300	Genius Netscroll+Mini traveller	Gigabyte GM-W9C	Gigabyte GM-W7C	iBall Laser Precise Cordless mini
Features	4.5	9.25	5.5	4.5	15	9.25	12.125
Wired / Cordless	Wired	Cordless	Wired	Wired	Cordless	Cordless	Cordless
Sensor	Optical	Optical	Optical	Optical	Optical	Optical	Laser
Design bias	Ambidextrous	Ambidextrous	Right-handed	Ambidextrous	Ambidextrous	Ambidextrous	Right-handed
Number of buttons	3	3	3	3	3	3	3
Horizontal scrolling	6	6	4	6	6	6	6
Batteries required	NA	2 AAA	NA	NA	2 NiMH	2 AAA	2 AAA
Power on/off switch	NA	6	NA	NA	4	6	4
Portable wireless receiver	6	4	6	6	4	4	Wired
Ergonomics	18.90	19.08	23.87	18.81	20.36	20.49	20.54
Grip	3.25	3.25	4.25	3.25	3.75	4	3.75
Placement of buttons	3.5	3.75	3.75	3.5	4	4	4
Click feedback	3.25	3.75	4	3	4	3.75	3.5
Gliding efficiency	3.75	3.75	4	3.75	4	4	4
Mouse weight	Light	Average	Light	Light	Average	Extremely light	Light
Vertical scroll feedback	3.75	3.75	4	4	4	3.5	4.25
Horizontal scroll feedback	0	0	3.75	0	0	0	0
Performance	16.56	16.84	19.38	13.81	17.50	18.44	18.13
Sensitivity	3.5	3.5	4.25	4	3.5	3.5	4
Performance in gaming	3.25	3.25	3.75	3.25	3.5	3.75	3.5
Performance in Excel	3.25	3.5	3.75	0.25	3.5	3.75	3.5
Performance in image editing	3.25	3.25	3.75	3.25	3.5	3.75	3.5
Price	900	1,800	1,000	620	1,199	1,399	2,495
Price Index	11.11	5.56	10.00	16.13	8.34	7.15	4.01
Overall Score	51.07	50.73	58.74	53.25	61.20	55.33	54.79



The iBall Laser Precise Cordless mini was the second laser mouse in this category, and sports a unique design. It uses rechargeable batteries that can be charged via the USB receiver.

The Genius Ergo 300 is the best-finished Genius mouse thus far in the entire test. The product quality matches with the likes of Logitech and Microsoft. Pretty much like the Ergo 525 in the desktop category, this younger sibling offers the same performance.

The BenQ M310 is an interesting mouse that could win an award for design. While in other mice, the USB receiver either snaps on to the bottom or doesn't, the USB receiver in the M310 slots inside the mouse and fits flush with the body.

Ergonomics

Microsoft's Notebook Optical Mice series is designed to provide the ultimate comfort without stressing your muscles.

The buttons are perfectly placed, the contour is near-perfect, and supports the palm nicely. The weight bias is centred, and hence these mice are easy to manoeuvre.

The Genius Ergo 300 comes next with its right-handed design. The body is sculpted for comfortable grip, and since it's wired, it's light. The rubberised material improves grip and offers excellent stability.

Logitech's V200 features a standard ambidextrous design, however, the use of two AAA batteries makes it a tad heavy. Also, since the batteries are placed near the tail, the weight bias makes the mouse tail heavy.

The iBall Laser precise cordless mini has a swooping design and is right-handed; however, it does offer good enough comfort due to its low-profile design. Our biggest gripe with this mouse was its small size, which hampers grip and stability.



Gigabyte GM-W9C

Performance

Microsoft's Notebook optical 4000 and 6000 mice topped our performance test. The 6000, with its brilliant laser tracking engine, is precise to a pixel and can be used for image editing as well. The 4000, despite its optical engine, is quite precise, and its great ergonomics makes it a perfect mouse for most work.

The Genius Ergo 300 and Microsoft Notebook Optical mouse 3000 are on par as far as precision and accuracy is concerned. Both these are great on ergonomics, and offer excellent tracking response. iBall's Laser Precise cordless mini offers excellent accuracy due to its laser tracking engine, but has some ergonomics flaws.

The Logitech V200 is a shade below Microsoft's notebook optical mouse 4000. The tracking engine is good, and this mouse presents itself as a good gaming option due to its slightly large size—only if you can put up with the weight.

Our Verdict

The winner in this category is clear: Microsoft's Notebook Optical 4000 Mouse emerges the winner. Looking at its good features, excellent ergonomics, top-notch performance and reasonable price, we declare it the notebook mouse to buy.

If you're on a limited budget, Gigabyte's GM-W9C offers the best compromise. And finally, if you can put up with a wired device, Genius' Ergo 300 and BenQ's M101 are pretty good buys too. ☐

sanket_naik@thinkdigit.com

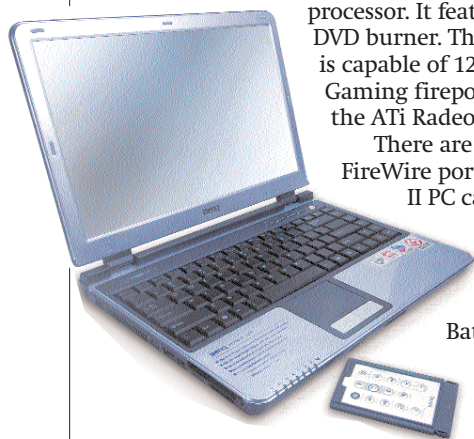
Notebook Mice

Logitech V200 Cordless Notebook Mouse	Microsoft Notebook Optical Mouse 3000	Microsoft Wireless Notebook Optical Mouse 4000	Microsoft Wireless Notebook Optical Mouse 6000
12.25	7.75	13.25	13.25
Cordless	Wired	Cordless	Cordless
Invisible optics	Optical	Optical	Laser
Ambidextrous	Ambidextrous	Ambidextrous	Ambidextrous
3	4	4	4
4	4	4	4
2 AA	6	1 AA	1 AA
NA	NA	NA	NA
4	6	4	4
22.97	24.57	24.26	24.26
4.25	4	4.25	4.25
4.25	4.25	4.25	4.25
4	4	4	4
4	4.5	4.5	4.5
Heavy	Light	Average	Average
4	4	4	4
3.5	4	4	4
18.31	19.31	20.63	20.63
4	4.5	4.5	4.5
3.25	3.5	4	4
4	4	4	4
3.5	3.5	4	4
	3		
2,495	1,638	1,900	3,685
4.01	6.11	5.26	2.71
57.54	57.74	62.13	60.35



BenQ Joybook 7000

The Joybook 7000 is a classy Centrino notebook. The most notable feature is the TV-Tuner and remote which, along with the QMedia Media Center software, turn the notebook into a full-featured media centre.



The notebook is powered by an Intel Pentium M 725 processor. It features a multi-format DVD burner. The 14-inch wide display is capable of 1280 x 768 resolution. Gaming firepower is provided by the ATI Radeon 9700 64 MB.

There are four USB 2.0 ports, a FireWire port, and a slot for Type-II PC cards. Wi-Fi b+g and 10/100 LAN are provided. There's a D-Sub connector and S-Video-Out. Battery life is over three hours. The 7000 weighs less than 2 kg. The price tag seems just right!

Company **BenQ India Pvt Ltd**

Price **Rs 70,000**

Phone **022-25705230**

E-mail **salesenquiryin@benq.com**

Web site **www.benq.com**

Rating 

Planon Docupen

A scanner for 007

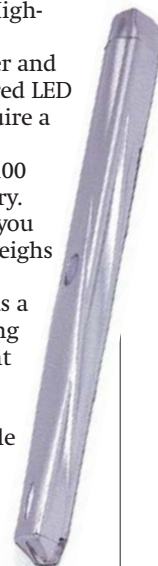
The Planon Docupen looks like a pen—it's just a little larger, but is, in fact, a portable scanner. It is built on a line scanner element. You can scan full pages of text and graphics at a rate of 4 or 8 seconds per page in Standard and High-Resolution mode respectively.

To scan, you need to press the button on the scanner and swipe it across the page—simple enough! The onboard red LED glows when the scanning speed is too high. It does require a bit of practice to obtain scans of acceptable quality.

The inbuilt 2 MB of Flash memory can store about 100 pages of text, and its LEDs indicate the available memory. The accompanying ScanSoft PaperPort software allows you to download scanned images to the PC. The Docupen weighs just over 50 gm, and comes in a leather pouch.

What we didn't like about the Docupen is that it has a maximum scan resolution of only 200 dpi. Besides, being hand-held, the scans are never as accurate as you'd want them to be. Also, the scans are only in black and white.

Rs 8,500 for this product is high, considering the negatives. You might want it only if you often scan while on the move.



Company **Computer Kitchen India Pvt Ltd**

Price **Rs 13,500**

Phone **080-41131001**

E-mail **info@computerkitchen.com**

Web site **www.planon.com**

Rating 

New & Notable

ExBoot EXB-0121

Instant backup and recovery

The EXB-0121 consists of a 40 GB hard drive housed inside a sleek enclosure. It is a portable, instant backup and recovery solution capable of quickly and easily backing up the operating system, programs, e-mails, pictures, and other data.

The device connects to the PC via two USB 2.0 ports, and is also powered via the USB port.

The hardware part is just half the real thing; the accompanying AXIOMTEK ExBoot

Professional is a backup recovery software that completes the product.

The ExBoot software uses a Wizard to facilitate incremental or full backup as the need be. Once you've performed a full backup, you can easily perform an incremental backup in one simple step anytime by simply pressing the button on the drive.



If your hard disk fails, you can boot from the ExBoot and perform system recovery procedures after replacing the failed hard drive.

There are other useful features too, such as Point-In-Time recovery, where you can recover the system to a point in time at which you made an incremental backup.

Such recovery can be very useful if your system was infected by a virus before the incremental backup.

The ExBoot can function as an external storage device, of course.

This is an excellent device for power users as well as home users for whom data and PC uptime is precious. And the price is just right!

Company **Xserve India Pvt. Ltd.**

Price **Rs 8,500 + taxes**

Phone **080-41131001**

E-mail **info@xserves.com**

Web site **www.xserves.com**

Rating 

Zebronics GeForce Case 2

The Zebronics GeForce Case 2 a.k.a. the ZEB-GF2 is a gamer's PC cabinet. It's got an alienish look, replete with two eyes that glow when it's powered up!

It's an ATX cabinet with two 3.5 inch bays and four 5.25 inch bays. Zebronics has implemented a screw-less fitting design for easy and convenient assembly of drives in the drive bays. Airflow and cooling considerations have been taken into account in this spacious cabinet—it provides a 12 cm fan at the rear in addition to a Prescott duct and PCI vent on the side panel.

The USB and audio ports are on the front of the cabinet for easy access. The cabinet, made from SECC material has a rugged build quality, which complements its good looks.

Zebronics has also provided a 400 W 24-pin power supply that is enough for a non-SLI gaming machine. Since Zebronics is the official SLI Partner of nVidia, the cabinet bears an nVidia logo which—you guessed it—glows when the cabinet is powered on! All taken into account, we liked this product.

Company **TopNotch Infotronics (I) Pvt. Ltd**

Price **Rs 3,000**

Phone **044-26616202**

E-mail **zebronics@zebronics.com**

Web site **www.zebronics.net**

Rating 



Seagate CompactFlash Photo Hard Drive

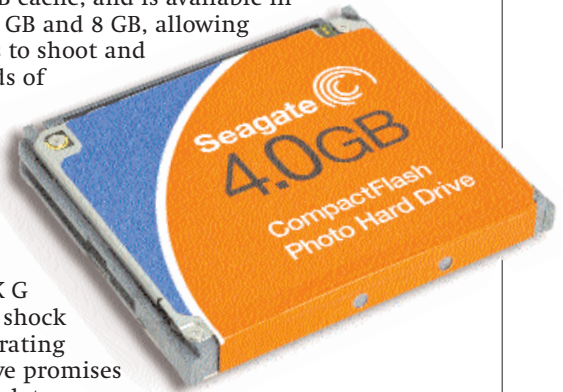
A Photographer's Best Friend

The Seagate CompactFlash Photo hard drive is a high-capacity storage solution for professional photographers and prosumers. This 3600 rpm drive features a 2 MB cache, and is available in capacities of 4 GB and 8 GB, allowing photographers to shoot and store thousands of high-res photographs without the need to change storage cards.

Rated to withstand 1.5K G non-operating shock and 200 G operating shock, the drive promises reliability and data protection under demanding conditions.

The CompactFlash Photo hard drive is compatible with all CF Type II, FAT32-formatted digital cameras such as the Nikon D70, Canon EOS 350D, Olympus E300, and more. A firmware upgrade may be required for some cameras for the Photo hard drive to work properly.

An updated list of compatible devices is available at www.seagate.com/support/photo/. Ensure compatibility with your device before deciding on this drive.



Company **Esys Distribution Ltd**

Price **Rs 6500 (4 GB); Rs 11,200 (8 GB)**

Phone **011-51811694**

E-mail **naresh@esysmail.com**

Web site **www.seagate-asia.com**

Rating 

Samsung SGH-D600

A Little Too Expensive

The successor to Samsung's D500, the D600 quad-band GPRS phone retains the slider form factor. It's a little more elegant, and has upgraded features in addition to a few new ones. The colour combination is a shiny black and dark grey, and the matte finish makes for easy grip.

Featured here is a vibrant 240 x 320 pixel, 262K-colour TFT (QVGA) screen. The camera gets an upgrade to 2 megapixels; there's no auto-focus, but picture quality is still good at higher settings—it's not so good at 800 x 600, though. The camera has a flash and a self-portrait mode, along with some software features such as multi-shot and mosaic. The quality of recorded video with sound is simply outstanding; however, the quality of the sound from the stereo speakers isn't extraordinary. The inbuilt MP3 player is easy to use, but the phone doesn't feature radio. It does feature Bluetooth, though.

Using the not-so-common TV-out feature, the phone can be interfaced with a TV via the bundled A/V cable. Once connected, the TV screen displays the phone interface, which switches to full-screen when you launch the file viewer or the camera. You can also listen to MP3 tracks



through the TV speakers. Another unique feature is Bluetooth printing to a compliant printer. The D600 supports popular file formats, so you can open files such as Word and Excel documents and PDFs on it.

Inbuilt memory is 55 MB, and an external 64 MB TransFlash (MicroSD) card comes bundled.

As for the phone interface, it's quite intuitive. Nokia users should be able to adapt easily. The slider can be operated with one hand—this is a better design than Samsung's typical clamshell models. The only thing that you may need a little getting used to is typing messages. Also, the T9 needs a little improvement.

The D600 does feel a little overpriced, considering you can get a W800i for roughly the same amount—and the latter comes with a half-gigabyte external memory stick. But still, there are features on this device that you might not find on other phones, at least not in the models currently available here.

Company **Samsung India Electronics Pvt Ltd**

Price **Rs 23,999**

Phone **011-41411234**

E-mail **vikas.tagra@samsung.com**

Web site **www.samsung.com/in**

Rating 

Genius GHT-S200 5.1 Surround Speakers

The Genius GHT-S200 is a stylish 5.1 surround-sound speaker system targeted at the home entertainment segment. It features a centre speaker for voice, one wooden subwoofer for bass, two rear and two slim front tower speakers.

The speakers consist of four neodymium micro drivers and produce amazingly crisp treble, and the 8-inch subwoofer produces rich, deep bass. However, the speaker system as a whole lacks in the mid-range department. Also, at high volumes—but only at high volumes—the bass begins to distort.

The provided connectors are colour-coded. The speakers can be connected to a DVD player or a 2.1-channel auxiliary source. But for 5.1-channel PC connectivity, you will need to purchase the connecting cables separately.

The Genius GHT-S200 comes with a tiny remote control with just the necessary controls. The subwoofer features an LED display that indicates information such as mode, audio source and volume, which can be

controlled separately for each channel.

The total power output is 200 W RMS. Connect it to your wide-screen TV, and the Genius GHT-S200 will turn your living room into a personal home theatre!

Company **Transtek Infoways Pvt. Ltd.**

Price **Rs 16,500**

Phone **0251-3950072**

E-mail **amit@ttek.in**

Web site **www.geniusnet.com.tw**

Rating 

Motorola L6

It's Flimsy, But Stylish!

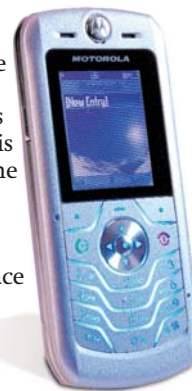
The Motorola L6, a tri-band phone, is the slimmest candybar phone to have hit the shelves. At 11.3 x 4.9 x 1.0 cm, the L6 is slim; however, it's a little too long, and this might hamper its pocketability. Though the body panels are metallic, the L6 feels fragile, and dropping it could prove fatal.

The ergonomics is spot on—the keys have an excellent feel. But the user interface is typical Motorola—unintuitive! Also, the display screen is not as vibrant as those on the latest phones from other manufacturers.

The phone has only a VGA camera, and can shoot video, but the anaemic camera ruins the fun.

Features and the software bundle have taken a backseat to style, but surprisingly, the L6 is Bluetooth-enabled. A mini USB port on the side allows wired data transfer, and also doubles up as the power jack. The L6 has about 10 MB of onboard memory, and there's no memory card support. Performance-wise, signal reception was pretty good, and the battery kept the phone alive for two days.

At Rs 8,905, the L6 hits the sweet spot on the pricing front. If you're on a limited budget and want a stylish phone, the Motorola L6 is perfect.



Company **Motorola India Pvt Ltd**

Price **Rs 8,905**

Phone **0124-2303212**

E-mail **wa260c@motorola.com**

Web site **www.motorola.com/in**

Rating 

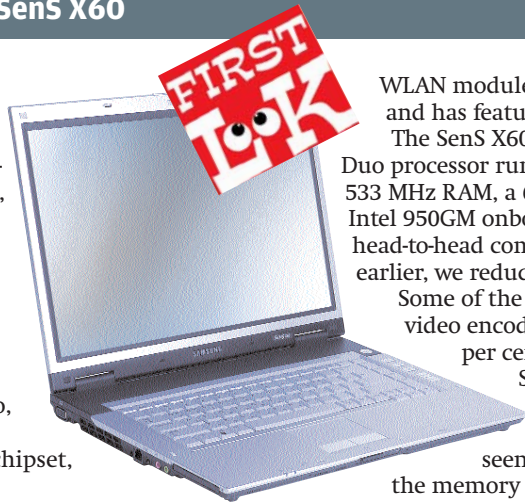
The Napa Platform—Samsung SenS X60

We got a chance to review the Samsung SenS X60, which hasn't yet hit the shelves. It's the first notebook based on Intel's next-gen mobile platform, code-named Napa, which was released in January of this year. We tested the X60 to see whether Napa lives up to its expectations.

The new platform is the third generation of the venerable Centrino platform, which brought about a revolution of sorts in the mobile computing segment. Napa, like Centrino, has three major components—a power-optimised processor, a completely new chipset, and the wireless module.

While Pentium M processors were used in previous versions of the Centrino platform, the Napa platform features the dual-core Yonah processor, officially christened "Intel Core Duo." The processor has 2 MB of cache; however, unlike the desktop dual-core Pentium D with a separate 2 MB cache for each core, this mobile processor uses shared 2 MB for both the cores. This design supposedly improves performance. Also, the FSB has been boosted to 166 MHz, resulting in support for DDR2 667 MHz dual-channel memory. On the clock speed front, these dual-core processors will be available from 1.5 GHz to 2.16 GHz.

On the chipset front, these notebooks will feature the 945GM/PM. The 3945ABG (Golan) is the wireless module that will go in most Napa-based laptops. This is the first Intel



WLAN module to plug into the PCI-Express bus, and has features that improve data throughput.

The SenS X60 is equipped with a T2300 Core Duo processor running at 1.66 GHz, 1 GB of DDR II 533 MHz RAM, a 67 GB, 5400 rpm drive, and the Intel 950GM onboard graphics controller. For a head-to-head comparison with some laptops tested earlier, we reduced the memory to 512 MB.

Some of the test results were astounding: in video encoding, the new processor is nearly 40 per cent faster than the Pentium M!

SiSoft Sandra 2005, too, reported similar results. The scores are much better than what we've seen on Pentium M laptops—ditto for the memory bandwidth benchmark. When

multitasking, the Core Duo processor outshines single-core based notebooks by a wide margin.

You'd expect that the dual-core processor would suck the juice out of the battery, but the fact is the battery life is about the same as that of most Pentium M laptops.

The Napa platform delivers what it was designed for—performance, while not being a power hog. If you're planning on buying a new notebook, we'd definitely suggest you wait and opt for the new platform, rather than investing in an older Pentium M laptop. The Samsung SenS X60 will be available in few months; Napa-based models from other manufacturers will soon pour in.

Rating 

3ds max 8

Design To The Max

Loyalists would beat our doors down for saying this, but 3ds max is not perfect. Release 8, for the most part, is for those loyalists. As usual, we find Autodesk's three-point approach here as well:

1. Fix annoying bugs
2. Pick a good plugin; buy rights and hire the developers to make it better
3. Keep everything looking the same so users feel at home

Add to all this a nifty alternative to the old and tedious UVW texture mapping, and you've got a 20-second review of 3ds max 8.

Ripping Out Skins

To ease the lives of texture artists, Autodesk has introduced the unique Pelt-mapping feature. In a few short clicks, you can tear your model apart, turning it into a spread-out version of itself, something like the bear-rugs you see sprawled out on people's floors. This makes it much easier to apply textures, especially to complex models like humans and animals. Even better, you can now render the spread-out version of your model and bring it into Photoshop to help you plan your texture.

Putting Hair On Your Chest

The most exciting development in 3dsmax is that Autodesk has *finally* absorbed a good plugin to add hair or fur to characters. In the true spirit of late but fashionable entries, this one doesn't disappoint—the new Hair Modifier is *really* easy to use, and hair can be fully animated. It also has support for collisions and other dynamics, giving it a more realistic feel. The setup screen for the plugin doesn't contain buttons for navigating the view, unfortunately, so you will need to educate yourself with some keyboard shortcuts ([Alt] + middle-click for rotating your view, etc.). Another gripe we have about the plugin is that it's quite eccentric—it would crash every so often, though we did get lucky sometimes. Service pack 1 contains a fix for this, so fret not.

Covering That Chest

Thus far, cloth animation has been left to third party plugins—even though the cloth functions used to come with Reactor, bundled with 3ds max. We've often found the Reactor cloth modifier a little daunting, and have been dying for something friendlier—like the SimCloth plugin. Now, in addition to Reactor's cloth, you also get a Cloth modifier which is *much* easier to use. This, like most cloth plugins, comes with its own kinks—we tried to do a scene with a towel hanging on a horizontal pole, only to find that the cloth goes clean through the pole! Still, a few tweaks and an unavoidable increase in polygon counts can help counter the effects.

Even making your cloth meshes is a lot easier this time. Rather



than painstakingly build the entire mesh, you can just build the individual pieces and "sew" them together tailor-style with the Garment Maker—quick and painless.

Going Mental

3ds max 8 *bundles* the Mental Ray renderer with it. This should have fans whooping with joy, for at one time, Mental Ray would cost the same as 3ds max, if not more. The license has been opened up a tad, too, so you need not buy separate Mental Ray licenses to render your scenes over networks. The renderer itself is expectedly powerful—the simulation of real-life lighting is eerily accurate, but the documentation expects you to be a physicist, making it an extremely difficult thing to learn. The best idea is to feel around and stop when you find a setting you like.

What Do You Want From Me?

Overall, 3ds max 8 mainly addresses user brickbats more than anything else. There is little surprise here—we wanted all this, and we got it. While we still maintain that it's gob-smackingly awesome for 3D modelling, the special effects department demands some more attention. Fire effects, for example, are still restricted to the staid atmosphere gizmos—we want something like the Particle/Object Combustion plugins that have been around since Release 2.5 and make playing with fire so much fun.

Company **Autodesk India Pvt Ltd**

Price **1,60,400 (including a 1-year subscription)**

Phone **080-51199900**

E-mail **selina.pinho@autodesk.com**

Web site **<http://india.autodesk.com>**

Rating 

Motherboards

Mercury PI915GVm

- Supports PCIE, DDR/DDR II RAM, 6-channel audio
- Only 2 PCI slots. No SATA.

Contact Kobian ECS India Pvt Ltd
Phone 022-23020767 / 774
E-mail mumbai@kobian.com
Price Rs 4,750



MSI RS480M2-IL

- + PCIE based, 6 channel audio, supports 4 GB RAM, socket 939, Firewire port
- No Gigabit

Contact Tirupati Enterprises
Phone 033-22251192
E-mail mail@tirupati.net
Price Rs 4,950



External DVD Writers

Lite-On LightScribe SHW-16H55

- Good performance, EZ-DUB
- No FireWire interface

Contact Mediatech India Distribution Pvt. Ltd.
Phone 022-26361111
E-mail digit@mediatechindia.com
Price Rs 6,495



PVR Software

WinDVR 3.0

- Ease of use, Pause TV, Zoom-in on TV, Tiled Preview of channels, DV-to-MPEG, Good picture clarity
- None

Contact www.intervideo.com

Cell Phones

Sony Ericsson W800i

- Feature rich and fast phone
- Can do with a better colour co-ordination

Contact Sony-Ericsson India
Phone 124-2560808
E-mail dhiraj.soni@sonyericsson.com
Price Rs 24,999



Graphics cards (High End)

XFX GeForce 7800 GTX

256 MB

- Extreme performance, great price, exotic features
 - None
- Contact Rashi Peripherals
Phone 022-28221013
E-mail navinderc@rptechindia.com
Price Rs 32,950



Linux

SuSe 9.3 Linux Professional

- Up-to-date software bundling
- None

Contact G.T. Enterprise
Phone 080-2669 5890/91/92/93/94
E-mail gtcdrom@vsnl.com
Price Rs 4,398



The A-List



The best products tested so far in different hardware and software categories

5.1 Speakers

Artis X10 Mini

- Compact, sturdy, clear sound
- Slightly weak bass

Contact Kunhar Peripherals Pvt Ltd
Phone 022-56345758
E-mail salesbom@kunhar.com
Price Rs 14,000

Internal DVD Writers

Lite-On Super AllWrite SHM-165P6S

- Good performance, supports all DVD formats
- None in particular

Contact Mediatech India Distribution Pvt. Ltd.
Phone 022-26361111
E-mail digit@mediatechindia.com
Price Rs 3,085



Flash based MP3 Player

Samsung YP-T8

- Feature packed, video playback
- Average bundled earphones

Contact Samsung India Electronics Ltd.
Phone 011-51511234
E-mail subrotah.b@samsung.com
Price Rs 14,850



YES YMP-910

- Excellent audio performance, extra features
- Average quality earphones

Contact Thakral Computers
Phone 022-24914090
E-mail prashantgoel88@gmail.com
Price Rs 7,450

CRT Monitors (17-inch)

Acer AC715

- High resolution of 1600 x 1200 @ 75 Hz, good reproduction of finer details
- None

Contact Acer India Pvt.Ltd.
Phone 080-5219520
E-mail rajesh.aiyar@acer.co.in
Price Rs 6,995

CRT Monitors (19-inch)

Samsung SyncMaster 997DF

- Good colour reproduction, compact
- None

Contact Samsung Electronics India
Phone 011-51511234
E-mail marketing@samsungindia.com
Price Rs 13,999



LCD Monitors (15-inch)

Acer AL1512

- Very competitively priced, good contrast ratio
- No vertical swivel

Contact Acer India Pvt. Ltd
Phone 080- 5219520-23
E-mail rajesh.aiyar@acer.co.in
Price Rs Rs 9,999

LCD Monitors (17-inch)

Acer AL714sm

- Light, good greyscale reproduction
- None

Contact Acer India Pvt Ltd
Phone : 080-5219520 / 23
E-mail rajesh.aiyar@acer.co.in
Price Rs 14,999



Burning Software**Sonic/Roxio Easy Media Creator 8**

- Feature rich, Low on system resource, Many bundled utilities
 - None
- Website www.roxio.com

Digital cameras (Mid Range)**Sony Cyber-Shot DSC-W5**

- Reproduces some great photographs, good features to close the list
- Relatively expensive in its class

Contact Sony India Pvt. Ltd.
Phone 011-55006600
E-mail mktginfo@ap.sony.com
Price Rs.18,990

**Home Inkjet Printers****Pixma iP1000**

- Economical; decent photo printing.
- No output tray; no PictBridge

Contact Canon India Ltd
Phone 0124-5160000
E-mail www.canon.co.in
Price Rs 3,195

**Office/ Photo Inkjet Printers****Canon Pixma iP 3000**

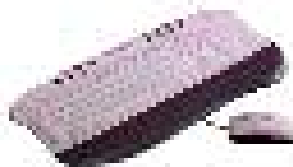
- Fast, excellent photo and text printing
- No LCD

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 7,495

Keyboard mouse Combo**Gigabyte GKM-10**

- Good ergonomics
- Can do with more features

Contact Gigabyte Technology (I) Ltd
Phone 022-26526696
E-mail sales@gigabyte.in
Price Rs 790

**Mono Laser MFDs****Canon MF 3110**

- High speed, low price
- No fax

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 19,995

PCs above Rs 25K**Acer Aspire ASP V4324**

- Good performance and package contents, low price
- None

Contact Acer India (Pvt) Ltd.
Phone 080-25219520
Website www.acer.co.in
Price Rs 25,999

Media Center PCs**HP Pavilion m7280in**

- Great design, features and performance
- Expensive

Contact HP India Sales Pvt. Ltd
Phone 0124-2566111
E-mail www.hp.com
Price Rs 63,999

Digital cameras (Mid Range)**HP PhotoSmart 945**

- 8X optical zoom, big lens results in some great photographs
- Not quite pocketable

Contact J.J Mehta and sons
Phone 022-24326865
E-mail sales@jjmehta.com
Price Rs Rs.16,500

Digital cameras (High End)**Sony CyberShot DSC-P200**

- Compact, 7 Mega Pixel performance oriented camera
- None

Contact Sony India Pvt. Ltd
Phone : 011-55006600
E-mail mktginfo@ap.sony.com
Price Rs.20,990

**Keyboard****iBall Power Key Designer**

- Feature rich
- None

Contact Best IT World (India) Private Limited
Phone 022-3081 5100
E-mail sales@iball.co.in
Price Rs 990

**Mouse****Logitech G7 Laser mouse**

- Feature rich and offers fantastic performance
- Expensive

Contact Logitech Electronic India Pvt. Ltd
Phone 022-26571160
E-mail kavita_nath@ap.logitech.com
Price Rs 6,495

Brother MFC-8440

- Good print and scan quality, Sheetfed & CIS scanner
- Low scan speed

Contact Brother International.
Phone 022-25797470
Web site www.brother.co.in
Price Rs 35,000

**Value PCs****HCL Ezeebiee 4981**

- Great performance and upgradable
- None

Contact HCL Infosystems Ltd.
Phone 0120-2520977
Website www.hcl.in
Price Rs 23,999

Lifestyle Ultra Portable Laptop**Sony VAIO VGN-S46GP/S**

- Good looks, Great performance, excellent LCD display
- None

Contact Sony India Pvt Ltd
Phone 011-55006600
E-mail mktginfo@ap.sony.com
Price Rs 99,990

Lifestyle Workhorse Laptop**Acer Ferrari 4002**

- Great looks and flaunt value, great performance
- None

Contact Acer India (Pvt)Ltd
Phone 080-25219520
E-mail ailenquiries@acer.co.in
Price Rs 99,999



About.com

Find all you ever wanted to know about, well, a lot of things at About.com

Jyotsna Rege

When you're looking for information *about* something, your natural destination is, of course, About.com. It's got information about everything you can think of. It is not a search engine, nor is it an encyclopaedia—it's a place where you look for detailed information about a topic, written by experts in their fields. And you can, therefore, be assured of the authenticity of the info you find—which can't be said about too many Web sites. This site is something like the old directory-style Yahoo!, only smaller.

We can't emphasise enough that About.com has information on almost everything under the sun. The home page is neat and well laid out, though a first-time visitor might be a bit overwhelmed by the sheer number of links. But you'll get used to it. For example, you'll notice human "guides," "what's hot now," and four neatly-sectioned, profiled topics of the week. Since every bit of information on the site is from an expert guide, there's the personal touch. Most pages are written in a matter-of-fact way; they're conversational in tone. They "talk" to you—they aren't plain reading pages.

Channels

Like we said, the site has advisors, called "guides," who are experts in their respective fields. To begin with, check out the left of the page, which has a cluster of popular topics under "Channels." Clicking on them brings forth a new set of sub-headings, and these are linked to more pages to search from. As you browse these pages, you can always look for anything in particular that you're interested in. And there are resources and advice from the guide throughout all the pages.

For instance, if you are looking for something as specific as using PHP Code in an HTML document, then, on the home page, you'd go to Channels > Computing & Technology > PHP / MySQL > PHP Basics > PHP Tutorial: Using PHP Code in an HTML Document. We know we're repeating ourselves, but the site is replete with such in-depth articles.

What's Hot

"What's hot" is an interesting feature; it appears in two formats. The home page has a section titled "what's hot now"—these are news topics, and clicking on them takes you to items that have recently made the headlines. And once you're inside a particular topic, the right side has a column that presents "what's hot" within it.

Navigation

You can always figure out where you are within the site—an arrow at the top shows you where you are, and traces your path through the pages. It's not easy, though, backtracking through the path during your initial forages, but you get accustomed to this after repeated visits. Also, categories and boxes and Centers pop up as you navigate, and for a first-timer, it's like "I-need-to-find-this-so-I'm-going-to-click-everywhere-I-can."

Browsing And Searching

The "Channels" aren't the only way to search—you can look for topics alphabetically under "browse by topic." Here, clicking on a letter opens a page with a list of the topics on the site. You might come up with 55 links or just one, depending on the letter you clicked on. To aid you in your search, there's a search feature at the top of the page. Key in a specific word, and results will appear from all over the About pages. For instance, if you want to look for anything to do with zoos, keying in "Zoo"



A search for "hard disk" leads to this page—on pcworld.about.com—albeit after a lot of navigation

in the search window brings forth about a 4,000 pages.

The site offers so much, it's difficult to find a specific topic without the search feature. For example, if you want to know about something like "napkin folding," conducting an alphabet search does not provide any results. You'd do better to use the search feature, and then, it's more than likely that you'll find what you're looking for.

So What's Not To Like?

Basically, the navigation. For one, the "Channels" don't cover everything—there's no "Technology" channel, for example. Neither does the alphabetical search for "T" bring up a "Technology" page, even though there are pages for "Tea" and "Toddlers." And when you do a search on "Technology," you get 40,000 pages—beginning with something on tech as religion! In general, you need to really narrow down your search.

We were looking for info about hard disks, so we searched for "hard disk." Even this brought us to a page that makes you go up a level, and "More Categories" appeared on the right: none of these had any documents in them! But magically, a "Computing Center" appeared on the left, from where we could browse through a universe of topics.

Some kind of navigation logic seems embedded in here, but you'll probably get it only after a while. Still, that's a small gripe for a site that provides so much organized information! ■

jyotsna_rege@thinkdigit.com



There may seem to be too many elements on the home page of About.com. A few of them are (1) The Channels (2) Your guide for the day (3) The search bar (4) Featured topics



A Conditional Formatting Problem

Say you're having a problem getting your conditional formatting to work as desired with information imported into Excel from Access. The data being imported in a particular column can either be text (such as "17 U") or numeric (such as "32"). The conditional format checks to see if the value in the cell is greater than zero, in which case the value is underlined. This won't work properly with the imported data because not only does Excel treat the text ("17 U") as text, but it also treats the numeric ("32") as text. This makes sense, since Excel treats the entire column as text rather than changing data format for each cell in the column. There are a couple of ways you can fix this problem. One is to change the formula you are using in your conditional format. Instead of checking to see if the value is greater than zero, use the following formula (set the conditional check to "Format Is"):

=VALUE(E3) > 0

This formula uses the VALUE function to check what is in cell E3. If the contents are a number—even if it is formatted as text by Excel—then the formula returns True, and the condition is met for the formatting. If the contents of E3 really are text (as in "17 U"), then the formula returns a #VALUE error, which does not satisfy the condition, and the formatting is not applied.

Another approach is to force Excel to evaluate the imported cells and convert them to numeric values, if appropriate. An easy way to do this is as follows: after importing the data, select a blank cell from a column outside the range of those you just imported. Press [Ctrl] + [C]. Select the cells that you want evaluated by Excel. For instance, select the column that contains the text values and the numeric values formatted as text. Choose Paste Special from the Edit

Tips & Tricks

SECRETS THAT KEEP YOU AHEAD IN THE RACE

GENERAL TIPS

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menu. Click the 'Add' radio button and click 'OK'.

What you just did was to "add" the contents of the Clipboard to all the cells you selected. If the cells contained real text, then nothing happened to those cells; they remain the same and are still treated as text. If the cells contained a numeric value, then Excel treats it as a number and adds zero to it. This value, as a numeric, is deposited back in the cell, and treated as a real number. This means that the conditional formatting test that you previously set up should work just fine on those cells since they are no longer treated as text.



Copying Conditional Formatting

In Excel, conditional formatting is considered part of the regular formatting of a cell. If you want to copy conditional formatting from one cell to another, you can do so by simply copying the cell and pasting it (or its format) to another cell. If you want to copy a conditional format to a range of cells (and only the conditional format), the easiest way to do so is this: select the range to which you want the conditional format copied. Make sure,

however, that the cell whose conditional format you want copied is part of the range. Choose 'Conditional Format' from the 'Format' menu. You will see the 'Conditional Format' dialog box. The format should already be filled in. Click 'OK'. Excel does the rest and copies the conditional formatting, as you desired.



What Are Add-Ins?

Many features of Excel are available only through what are called add-ins, for instance, the Analysis ToolPak. The tools available in add-ins are not part of the basic Excel system, but can be added to the system as and when needed. Add-ins are programs that have been "added to" Excel in such a way that they appear to be part of Excel itself.

You can find many useful add-ins for Excel on the Net.

Excel allows you to translate your macro programs into add-ins. Converting them to add-ins has several advantages:

1. The program code cannot be altered by others.
2. The program code runs a bit quicker.
3. The add-in is available without needing to open any particular workbook.

4. The functions provided by the add-in appear to be a part of Excel.

Add-ins are, therefore, a special type of workbook that you've converted to a format understood by Excel.



Creating An Add-In

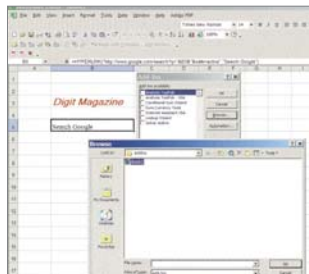
Any Excel workbook can be converted to an add-in. To create a protected add-in file, first load the workbook that will become your add-in. Start the Visual Basic Editor by choosing Macro from the Tools menu, then choosing Visual Basic Editor. At the very top of the Project window, select the bold entry that declares the name of the VBA project that is open. Choose the Properties option from the Tools menu. This displays the Project Properties dialog box. Make sure the Protection tab is selected, and make sure the 'Lock Project For Viewing' checkbox is selected. Enter a password in both fields at the bottom of the dialog box. Click 'OK'—the dialog box closes.

Close the Visual Basic Editor and return to the Excel workbook. Choose File > Properties. In the Summary tab, make sure the 'Title' field is filled in. What you enter here will appear in the 'Add-Ins' dialog box used by Excel. Make sure the 'Comments' field is filled in. What you enter here will appear in the description area of the 'Add-Ins' dialog box used by Excel. Click 'OK' to close the dialog box. Now choose 'Save As'. Using the 'Save As Type' pull-down list, specify the Microsoft Excel Add-In (*.xla) file type. Specify a name in the 'File Name' field. Click 'Save'. Your add-in file has been created. Finally, close the workbook you just saved as an add-in.

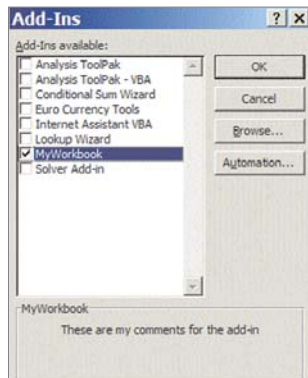


Using An Add-In

After you have created your own add-in, you can use it in your system. Once the add-in has been loaded, the functions or features in the add-in become available to any other workbook you may have open, or any time you are using Excel. To use your add-in, choose 'Add-Ins' from



Save a Workbook as an add-in by selecting "Add-Ins" under Save As



After you've saved your add-in, it will show up under "Add-Ins"

the 'Tools' menu. This displays the 'Add-Ins' dialog box. If your custom add-in is visible in the dialog box, click the checkbox beside it and click 'OK'—you're done. Otherwise, click 'Browse', and use the controls in the dialog box to locate and select your custom add-in.

Automatically Loading Add-ins

First load the worksheet for which you want a specific add-in loaded. Then press [Alt] + [F11] to display the VBA Editor. Double-click on the 'This Workbook' object in the Project Explorer. Excel opens a code window for this Workbook. Place the following macros in the code window:

```
Private Sub
Workbook_BeforeClose(Cancel As Boolean)
AddIns("Add-In
Name").Installed = False
End Sub
Private Sub
Workbook_Open()
AddIns("Add-In
Name").Installed = True
End Sub
(In the code, change "Add-
In Name" to the name of the
add-in.)
```

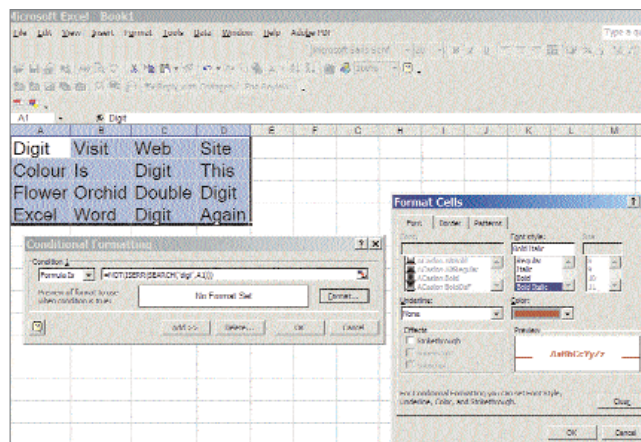
Close the VBA Editor and

save your worksheet. If you're not sure of the correct name for a particular add-in, you can use the macro recorder to record the process of activating an add-in. That will show you the exact name you should use in the above macros.

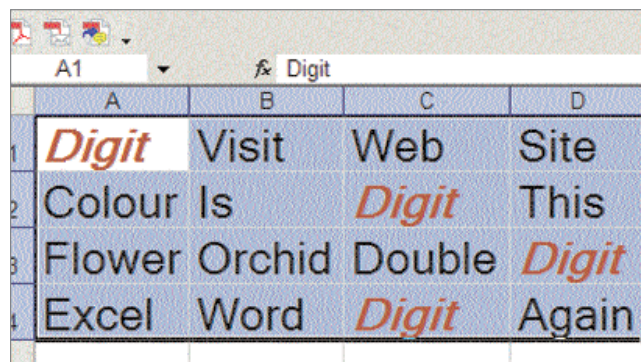
Using CF To Draw Attention

You can use the conditional formatting feature to help draw attention to cells that contain specific text in which you are interested. For instance, if you have a range of cells and you want to know which ones contain the letters "DIGIT", then you can do the following: first select the range of cells. Choose 'Conditional Formatting' from the Format menu. In the drop-down 'Condition' list, choose "Formula Is". In the formula box, enter the following formula. (Replace 'A1' with the address of the cell in the upper-left corner of the range you selected.)

=NOT(ISERR(SEARCH("DIGIT",A1)))



Choose a range of cells and apply conditional formatting by choosing "Formula Is"



Once you've applied your criteria, your specified word(s) will appear in your chosen format

Click 'Format'. Excel displays the 'Format Cells' dialog box. Using the controls in the dialog box, specify a format that you want used for those cells that contain the specified text. For instance, you may want bold text in a yellow typeface. Click 'OK' twice.

You can make this approach even more general-purpose by specifying a cell that contains what you want to search for. For instance, if you type "DIGIT" in cell F7, then you could replace the formula with the following:
=NOT(ISERR(SEARCH(\$F\$7,A1)))

Now, you can search for something different just by changing the characters in cell F7.

External Data Validation

Data validation allows you to control what information is entered into a worksheet. Validating based on information internal to a workbook is easy; validating to information in another

workbook can be a real pain. Normally, Excel expects you to specify your validation range as being on the same worksheet where you are defining the validation rule. If you try to enter a range that is on another worksheet or in another workbook, Excel brings up an error message.

What if you want the validation range to be on another worksheet, just so you don't clutter up the current worksheet with extraneous data? The easiest way to do that is to follow these general steps: first, select the range of cells you want to use as your data validation values. Choose 'Name' from the 'Insert' menu, and then 'Define' from the submenu. Excel displays the 'Define Name' dialog box. Enter a unique name for your data validation range, such as "MyValRange", then click 'OK'. Now select the cell for which you want to define a validation rule. Choose 'Validation' from the Data menu. Excel displays the 'Data Validation' dialog box.

Use the 'Allow' and 'Data' drop-down lists to specify how you want Excel to validate the data. Depending on your selections, you will see a Value, Minimum, or Maximum boxes appear in the dialog box. In the appropriate boxes (Value, Minimum, or Maximum), specify the name you gave your data validation range ("MyValRange"). Click 'OK'.

This approach works fine if the data validation range is in the same workbook. What if you want to use a data validation range that is in an entirely different workbook? You can trick Excel into accepting your external reference if, instead of specifying a name, you enter a formula such as the following:

=INDIRECT("[Book2]Sheet1!D6")

This formula uses the INDIRECT function to return the value at a cell on another worksheet, and the data validation feature will accept it with no problems. In this case the cell being checked is



Schedule A Shutdown Using AMP WinOFF

Did you know that you could schedule a system shutdown—for when you've, say, set up a virus scan, and want to go to sleep?

Anup Nair

There are times when you need a tool that can automatically shut down your system at a prescribed time. Say you have an application running, and it's night-time. You want to go to bed, but you also want to shut down the system within three hours, since you know that the running application will not take more than that to finish. This could happen in the case of a download, a virus scan, or something of that sort.

We found an interesting tool on the Internet that can be used to schedule a shutdown of your Windows system. And that's not all—you even have other options, such as taking a screenshot of the desktop before the system turns off. And the app is free!

STEP 1 Download And Install

The application, AMP WinOFF, is available at www.ampsoft.net/utilities/WinOFF.php.

Download it and double-click the setup file (WinOFFSetup.exe) to start the installation. All you need to do is follow the installation Wizard. The installation creates a desktop icon; you can also access the tool from Start > All Programs > AMP WinOFF > AMP WinOFF.

STEP 2 Understanding The Interface And Options

When you start the utility, an error pops up, which you can ignore—this is a bug (the first time you run this utility, you won't see the error). The interface has three tabs: 'Shut Down Programming', 'Options', and 'Administration'.

The first tab, 'Shut down Programming', has settings that can be used to choose a method or mode of shutdown, and the other options specify when a machine should initiate the selected mode. You need to select both a mode of shutdown (i.e. Power off, Hibernate, Restart, Lock screen, and more) and the time or the interval at which the chosen action is to be performed.

The settings in the 'Options' tab are in two categories: 'Shut down options' and 'Basic options'. 'Basic options' deals with the settings for

the utility, while 'Shut down options' are the main thing, used for scheduling the shutdown.

The 'Administration' tab is similar to the first tab, except that it has certain administrative rights, for instance, setting a username and password. You don't really need this tab—shutting down can be done without using it.

STEP 3 Scheduling A Shutdown

You first need to set a time and date at which you want the machine to turn itself down. Or, you can specify an interval, say, 45 minutes. Let's use the date and time feature.

Open WinOFF, and under the first tab, enable 'Shut down system at'. You'll notice that the Hours, Minutes and AM/PM sections can now be edited. Clicking on 'Use current date and time plus N minutes' will add N minutes to the current time for the shutdown (or whatever action you've chosen). Let's manually enter the time instead.



Date settings can be used to turn off a machine at a distant date and time

If the time now is 10:00 AM, and you want the system shut down at 12:30 in the afternoon, enable "AM/PM time", and type in "12" in the hours box and "30" in the minute(s) box. Lastly, choose "PM". You can choose the date by enabling the 'date' checkbox, and then choose a date from the small calendar that drops down on clicking it. Our example doesn't need a date for shutdown.

STEP 4 Selecting A Shutdown Mode

Now that we have the shutdown time, you need to select the shutdown mode. Since our example talks of anti-virus scanning, you would like to see the results of the scan, and also perform a "quarantine" or "delete file" task if malicious content has been detected.



Set WinOFF to take a screen shot of the desktop before shutting down

It would therefore be wise to choose "Hibernate" as the shutdown mode.

The 'Options' tab has some nifty features. Let's use one of them: the Desktop image capture feature. This could turn out to be useful if your computer doesn't wake up from Hibernate, or if you chose to shut down the PC.

STEP 5 Other Options

Check the box next to 'Capture the desktop before shut down', and choose the JPEG format. You may also add a timestamp to the image by checking the box next to 'Add date and time to the image file name'. That's not all—you can increase the quality of the image, under 'Other options'. Increase the image quality to, say, "70%" in the box against 'Desktop capture JPEG quality'. Click 'OK' to activate the schedule.

You will notice a LCD-like panel displaying information about the scheduled turn-off just above the system tray. It is, by default, set to stay on top of all other applications.

Say you've set a download and also want your system to shut down at some time. The modem or

other Internet connection will be active when the PC is being turned off. You can use the option 'Hang up before shut down' to disconnect a modem-based connection. And, if you use an Internet connection that needs to be logged off using a client, you can use the 'Execute a program before shut down' option. Both these are under the 'Options' tab. ☐

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Apply the scheduled turn off settings, and an LCD-like interface shows up

at cell D6 on Sheet1 of Book2. In order for this to work, you will need to make sure that Book2 is open at the same time that your main workbook is open.



Advanced Filtering

There are some situations in which AutoFilter just can't cope up. For instance, you might need to perform a calculation in a filter comparison. In these cases, you can use the advanced filtering capabilities of Excel.

Advanced filtering requires that you set up a criteria range in your worksheet. This criteria range is not part of your data list, but instead is used to signify how you want filtering to be performed. Typically, you would place your criteria before your data list, but you can also place it after. The important thing is that you separate your criteria from your data list by at least one empty row. Otherwise, Excel may think that the criteria are part of the actual data list. The criteria are entered in your worksheet such that each column represents a different logical AND comparison, and each row represents a different logical OR comparison. An example is in order here.

Let's say you have a data list that starts in the sixth row of a worksheet. You have set aside the rows above this to specify your filtering criteria. The data list contains columns that describe information in your inventory. There are columns for item numbers, description, location, quantity, value, and the like. There is also a calculated column that indicates the loss derived from each inventory item.

At some time you may want to filter your data list so it shows only a limited subset of your inventory items. For instance, you might want to see only those items for which the quantity is over 2,500 and loss is less than 1,000, or those items where the quantity is greater than 7,500, or those items where

loss is under 100. This is much more complex than you can perform using a custom AutoFilter.

To set up such a filter, all you need to do is set your criteria. In this case, you would use cells A1:B4 as follows:

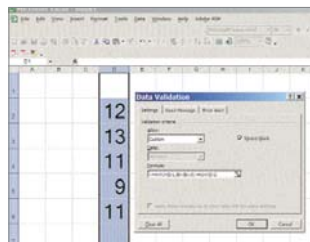
	A	B
1	Quantity	Loss
2	>2500	<1000
3	>7500	
4		<100

The first row shows the field names to be used in comparisons, while the second through fourth rows define the actual comparisons. Notice that because there are two tests in the second row, these are considered an AND condition, and those on the other rows are considered OR conditions.

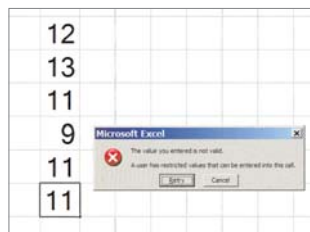
To apply these filtering criteria, follow these steps: first select any cell in the data list (not in the criteria). Choose Data > Filter. Choose the 'Advanced Filter' option from the submenu. Excel displays the 'Advanced Filter' dialog box. The 'List Range' should automatically be set to your data list. Select the 'Criteria Range' field. The insertion point should appear within the field. Use the mouse to select the criteria range, cells A1:B4. Click 'OK'.



Ensuring Unique Values In A Column



To ensure unique values, you can use Data Validation for the range



With Data Validation, typing in an incorrect value brings up an error

When you are entering information in a worksheet, you may want to ensure that the data being entered is actually unique for a particular column. For instance, if you are entering a series of invoice numbers in column D of a worksheet, you may want to ensure that you don't enter the same invoice number twice.

There are a couple of ways you can approach such a problem. If you are always entering your new information at the bottom of a column, you can use Excel's data validation feature to make sure that whatever you are entering in the current cell does not match anything higher up in the column. Simply follow these steps: first, select column D. Choose 'Validation' from the 'Data' menu. Excel displays the 'Data Validation' dialog box. Using the 'Allow' drop-down list, choose the 'Custom' option. In the 'Formula' box, enter the following formula:
`=MATCH(D1,$D:$D,0)=ROW(D1)`

Click 'OK'. If you may be entering data anywhere within column D, and you want to know if you are entering a value that is elsewhere in the column (above or below the current cell), then you can follow the above steps, but use this formula instead:
`=COUNTIF($D:$D,D1)<2`



Dynamic Hyperlinks

You can create dynamic hyperlinks in Excel that act like HTML forms without having to know much about HTML. These hyperlinks can come in handy when using Excel as an interface to the Internet. As an example, let's create a Google search form. First, do a Google search for the keyword "Excel." Then, take a look at the URL in your browser's address bar. It may look something like this:

`http://www.google.com/search?hl=en&q=Excel&lr=lang_en`

The parameters following the question mark (?) are the name-value pairs submitted by the HTML form. But, you don't need to know a whole lot about that. In this case,



Bet You Didn't Know

Jumping Around Folders

If you work with multiple workbooks at the same time, you know that traversing folder (directory) paths in the Open dialog box can be tedious. Say you have a workbook you're working on. You open a second workbook in a different directory. Now comes the time to open a third workbook. When you display the 'Open' dialog box, Excel assumes you want to start from where you opened the previous workbook. What if you want to actually open it from the same directory in which the first workbook was located? Of course, you can again use the 'Open' dialog box to traverse back to the original directory. An easier method is to display the first workbook, then choose 'Save As'. Excel displays the 'Save As' dialog box, starting from the directory in which the workbook was originally loaded. (This is the directory you want.) Close the 'Save As' dialog box! Now, when you use the 'Open' dialog box, Excel starts in the folder you were last in—the one you want.

the main thing to consider is the search term, where "q" is the name of the parameter, and "Excel" is the value.

Using the HYPERLINK function along with the CONCATENATE function (or just the ampersand), you can easily assemble a link and create a dynamic form using cells as fields: in cell B3, enter the keyword "Excel Web Queries." And in cell B4, enter the following formula:
`=HYPERLINK("http://www.google.com/search?q="&B3&"&safe=active","Search Google")`

Now you have your own simple HTML form inside Excel. You can create much longer hyperlinks and include multiple cell references, but there is a limit in Excel to how long the hyperlink can be (about 248 characters). To use the form, just enter your keywords into cell B3, and click on the hyperlink in cell B4.



Deleting Many Hyperlinks

If you inherit worksheets from other people, you may find that some worksheets contain many, many hyperlinks. These hyperlinks are often automatically created by Excel as you import or enter information in the worksheet. If you want to delete these hyperlinks, you can do so by right-clicking on them and choosing **Hyperlink > Remove Hyperlink** from the Context menu. Doing this with dozens or hundreds of hyperlinks can consume a huge amount of time. To delete all the hyperlinks in the active worksheet at the same time, you can use a one-line macro:

```
Sub DeleteHyper()  
ActiveSheet.Hyperlinks.
```

Delete

```
End Sub
```

Select the worksheet you want to affect, and run the macro!



Recalculate Formulas

There are two ways Excel recalculates formulas—automatic and manual. Go to **Tools > Options**, and click the Calculations tab. Select 'Automatic Update' if you wish to have Excel always update your data. Select 'Manual Update' if you wish to have Excel update formulas only when you tell it to. Under Manual Update:

[F9]: Calculates all worksheets in all open workbooks. When a portion of a formula is selected, it calculates the selected portion. You can then press [Enter] (or [Ctrl] + [Shift] + [Enter] for array formulas); Replaces the selected portion with the calculated value.

[Shift] + [F9]: Calculates the active worksheet.

[Ctrl] + [Alt] + [F9]: Calculates all worksheets in all open workbooks, regardless of whether they have changed since the last calculation.

[Ctrl] + [Alt] + [Shift] + [F9]: Checks dependent formulas and then calculates all cells in all open workbooks, including cells not marked as needing to be calculated.



Opening An HTML Page In Excel

Excel is "Web aware," meaning that the program knows how to handle hyperlinks. You can add a hyperlink in a document, click on that link, and Excel opens your Web browser and displays the contents of that link in the browser. (You can also create a hyperlink to other Office documents, including Excel workbooks.) You can even create hyperlinks to different objects on your worksheet, such as a command button in a form.

What if you want to start the browser and open an HTML file from within a VBA macro? There are a couple of ways that you can do this. The first is to simply open a new Internet Explorer object within your code. A macro to do this would look like this:

```
Sub DoBrowse1()  
Dim ie As Object  
Set ie =  
CreateObject("Internetexplor  
er.Application")  
ie.Visible = True  
ie.Navigate  
"c:\temp\MyHTMLfile.htm"  
End Sub
```

This macro will open the file "c:\temp\MyHTMLfile.htm" in a new Internet Explorer window. If you want to instead open a Web page from over the Internet, you can do so simply by changing where you want to navigate—replace the file path with a URL.

Another way to accomplish the same task is to rely on Excel to figure out what your default browser is and open the HTML resource. Use the following macro:

```
Sub DoBrowse2()  
ActiveWorkbook.FollowH  
yperlink _  
Address:="c:\temp\MyHT  
MLfile.htm", _  
NewWindow:=True  
End Sub
```

Again, the browser opens a new window and displays the specified file. You can change the Address parameter to any URL you want.



Data In A Single Column

Say you use a program to create a CSV file. This file can then be opened in Excel for further analysis. When you double-click the CSV file in Windows, Excel starts and loads the file. The problem is that the file, when opened, isn't parsed by Excel. Instead of the comma-separated values being in different columns, every record appears in a single column. The reason for this is quite simple, and has to do with the format in which the data is stored in the CSV file by the non-Excel program. To understand that, you need to understand how Excel opens CSV files.

When you open a CSV file in Excel, the program treats any commas in the file as delimiters. You cannot override this automatic filtering when opening the file. So, how does Excel treat the incoming data? Consider that the CSV file contains the following four records:

```
a,b,c,d,e  
"a,b,c,d",e  
a,"b,c",d,e  
"a,b,c,d,e"
```

As far as Excel is concerned, the first record has five fields, separated by commas. The second record has only two fields, "a,b,c,d" and "e." In other words, Excel ignores any commas that may appear between the quote marks. Given the effect that inverted commas have, the third record has only four fields, and the fourth record is interpreted to have only a single field.

What this has to do with the CSV file loading incorrectly is that it is very possible that the program creating the CSV file is putting a pair of inverted commas around each record. This would cause everything in the record to be treated as a single field by Excel, which means it ends up in a single column when the CSV file is loaded.

There are a couple of ways to verify this. The first is to simply open the CSV file with Notepad and look at each record. Another way is to rename the CSV file so that its extension is not '.csv' but

' .txt'. When you open this file within Excel, the Text Import Wizard starts. Choose 'Delimited', click 'Next', and then you can see what delimiters are chosen. Pay attention to the Text Qualifier; if you change it, you can immediately see at the bottom of the dialog box how Excel interprets the file's records.

If you find that there are extra inverted commas around each record in the CSV file, there are three things you can do.

The first is to change the program that creates the CSV file so that it doesn't add the extra inverted commas—you'll then be able to import with no problem.

The second is to go ahead and load the CSV file into Excel, such that each record is in column A. The surrounding inverted commas will be gone, stripped out by the import process. This means that you can now use Data > Text to Columns to separate the data in column A into individual columns.

The third thing you can do is to create a macro that will open the CSV file and parse it for you. This is particularly helpful if you will be opening, over time, many CSV files that have the exact same format. Your macro could be as elaborate as desired, even formatting columns and processing data as it is imported.

Linux

Some Linux distros such as Fedora don't play back MP3 or AVI files. Users have to go through the ordeal of getting them to work on their machine. Here we will see how to install XMMS player to play MP3 files on a Fedora Core 3 box, permanently create aliases for long commands, use cdcrecord to burn CDs, and installing an alternative for MSN messenger.

These tips can be very useful for those new to Linux. We will be using Fedora Core 3 for this purpose.



Securing An Internet Kiosk

You can use Public PC Desktop to restrict what people do on a public machine

Anup Nair

It is difficult to maintain a PC that is used many different users—for example, a PC at an Internet café. People can easily mess with important system files, download too many files, install unneeded software, and so on. You could choose to add a Limited access user account for general users, but that may not be sufficient.

If you want to tighten the screws a bit, you'll need to depend on third-party software such as Public PC Desktop by Ixis Research Inc. Let's check out how to configure a machine for limited access at an Internet café or cyber café using this software.

1 STEP Download And Install Public PC Desktop

Download the software from www.softheap.com/pubpcd.html. This is shareware, which means you can try it for free, for a limited period. Double-click on the setup.exe file to install the software. The Wizard will guide you through the installation.

2 STEP Choosing The Right Options

The first screen displays the main set of options: Access Control, Password, Users, and Time Codes. In our example here, we'll use these to set up a public Internet access terminal.

The other options can be viewed by clicking the 'More options' button. Here, you can set certain shortcuts for a user to use, block certain sites, and also change certain Internet Explorer properties for security reasons. The most important option here is the proxy settings. However, the proxy settings only gives the option of ports for HTTP and HTTPS traffic, which is somewhat restrictive, but just about enough for regular connections.

Let's use the first set of options to lock a workstation.

3 STEP Access Control

Under 'Access Control', you have three options to choose from. These are essentially the modes by which you control access:

- (a) Username and password
- (b) Time-limited lock
- (c) Let the user choose



Access Control gives an administrator three ways to unlock a workstation as shown above

The first choice is ideal when there is a stable flow of users, that is, when there are almost never any new users. In this case, the administrator has to maintain a database of users that can be used in all the workstations.

'Time-limited lock' allows the administrator to generate a time key code for a certain number of minutes. This key is given to the user so he can log on to a workstation. The user is allowed to use the workstation only for that time interval; the workstation gets locked as soon as the time limit expires.

The third option allows the user to choose to unlock the workstation using the username and password, or by giving a time code. For a cyber café, where it is difficult to set up a database of users with passwords, it is ideal to choose time codes.

4 STEP Setting Up A Limited-Access Workstation

In this step, you'll be actually setting up the workstation for limited access. Click on 'More options' and create a list of shortcuts of all the



Apply a master password and a time encoding keyword along with a password for shutdown and reboot options

applications you want a user to have access to. An ideal list of applications would contain Internet Explorer, MS Office, Notepad, and a few more. The next step is to set the proxy. Only you, as administrator, knows the port numbers; add them to the settings. Now, get back to Access Control.

Set a master password and a time-encoding keyword. The master password is for the administrator, and the keyword is used to generate time codes, which can be done by clicking on 'Passwords'.

Jump to 'Time codes' and specify the time for which you want the user to use the workstation, and then click on 'Generate'.



Give a user the generated time lock keyword to unlock the session for use

This will give an encrypted code. A user can use this code to unlock the workstation and use it for the specified time limit. He or she may choose to log off before the time limit, but the workstation will get locked anyway when the limit is reached. A locked workstation looks something like the screenshot below.



A time locked session is as shown above



Reminding a user of an access restricted area of a locked workstation

When accessing the hard disk of a computer from a restricted workstation, an error message pops up, reminding the user of the applied restrictions. ■

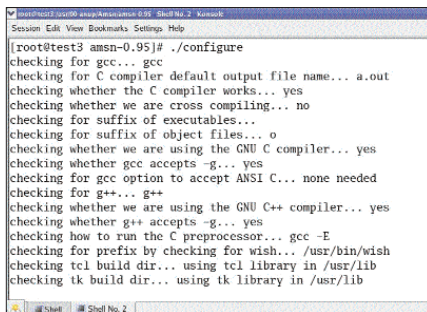
anup_nair@thinkdigit.com

Installing MSN Messenger

You can use Gaim, a multi-messenger, to connect to MSN messenger, but if you want to have a dedicated messenger that looks and feels more like Windows MSN messenger, you're probably looking for AMSN. You can download the installer from <http://amsn.sourceforge.net>. You may choose to download ready made installers depending on the distribution. We will tell you how to install it from a tarball. After you have downloaded the tarball, switch to the directory where you have saved it and untar/uncompress the files using the following command:

```
# tar -zxvf amsn-0.95.tar.gz
```

Now we have to configure aMSN by running its configure script; but always read the README or the INSTALL file before you proceed as it gives information of dependencies



```
Session Edit View Bookmarks Settings Help
[root@test3 amsn-0.95]# ./configure
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ANSI C... none needed
checking for g++... g++
checking whether we are using the GNU C++ compiler... yes
checking whether g++ accepts -g... yes
checking how to run the C preprocessor... gcc -E
checking for prefix by checking for wish... /usr/bin/wish
checking tcl build dir... using tcl library in /usr/lib
checking tk build dir... using tk library in /usr/lib
```

The list of commands that run when you're trying to install aMSN



aMSN looks just like Windows' MSN Messenger

if any. You should have tcl-dev and tk-dev packages. Now, run the configure script by typing in

```
#./configure [Enter]
```

This script will check for all the dependent packages and create a Makefile for final installation based on the detected system configuration. On successful completion of configure, run the **#make** command. This will take some time; after that, finalise the installation with the command **#make install**. You can launch the messenger immediately by typing "amsn" at the shell prompt. Or reboot to find the link on Hat > Internet > aMSN.

Your Linux alternative for MSN messenger is as shown in figure 3.



Using cdrecord

Most Linux distributions have an inbuilt command line CD burning tool called 'cdrecord'. Using this tool isn't as simple as it was in Redhat 9 shrike. A few things need to be configured before you can proceed with the steps to record a CD.

First, type in the command **cdrecord -scanbus** at the shell prompt; if the output shows your CD/DVD writer on 1,x,x or 2,x,x, then we have work on our hands. But if the output displays the drive on 0,x,x (ideally 0,0,0) then skip to the MKISOFS step. The steps involved:

1. Identifying your drive's device driver
2. Loading ide-scsi emulation
3. MKISOFS
4. CDRECORD for CD-R
5. CDRECORD for CD-RW

When identifying your drive's device driver, it is

advisable to use the CD/DVD-Writer as secondary master, be it Windows or Linux, or any OS for that matter. In our example, the DVD-Writer is connected as secondary master, and the device driver then becomes **/dev/hdc**. To know this without flirting with the hardware, type in "**dmesg |grep -i CD**" at the shell prompt. The output will be similar to: "Added public key 6ECD A687281A73E5 hdc: LITE-ON DVD RW SHM-165P6S, ATAPI CD/DVD-ROM drive"



Loading ide-scsi Emulation

IDE emulation is required for Fedora as the CD writers are loaded as scsi drive, and we need to emulate that to IDE manually (Users of Red Hat 9 or below do not need to do this). Just follow the following instructions:

Change to root user, and type in

```
/sbin/insmod -p ide-scsi
and hit [Enter].
```

if you get an error then we have to make a few changes in a few important files. First create a file under **/etc** named "modules.conf" if it doesn't already exist, and add the line:

```
"alias scsi_hostadapter
ide-scsi"
```

Save and close the file. Also, you can add the following command to **/etc/rc.local** so that it is executed at every boot:

```
"/sbin/insmod ide-scsi"
```

Now comes the critical part of the boot loader. Many people use grub, but some use lilo. Grub users should open the file **/etc/grub.conf** using the vi editor. Take the cursor to the line:

```
"kernel /vmlinuz-2.6.9-1.667 ro root=LABEL=/ rhgb
quiet"
```

And add "**hdc=ide-scsi**" at the end.

Lilo users should open "lilo.conf" located under **/etc** using the vi editor, or any

text editor of your preference, and add **append="hdc=ide-scsi"** to it. Note that **hdc** is the secondary master on the IDE cable that connects your CD/DVD drive to the motherboard of your system. Lastly, run **lilo** at the shell prompt to effect the changes.

Grub users need not run any command. Now reboot the system to initiate all changes. Login as root or switch to root using the "**su**" command and run

```
/sbin/insmod -p ide-scsi
```

to check if the settings have worked. You shouldn't get an error. Or try

```
#cdrecord -scanbus
```

The output should now show your CD/DVD drive on: 0,0,0 0) 'LITE-ON ' 'DVD RW SHM-165P6S' 'MS0C' Removable CD-ROM

You have successfully loaded ide-scsi emulation!



Using MKISOFS

To burn a disc using **cdrecord** command, we have to create ISO filesystem containing all the files you want on your CD. To make an ISO file:

```
#mkisofs -v -o
isofilename.iso file1 file2
file3... [Enter]
```

Or create a folder, say **/tmp/Disc**, and dump all the files you want to copy to a CD into this folder. Change the directory to **Disc** (here: **/tmp/Disc**) and then use the same command as:

```
#mkisofs -v -o
isofilename.iso * [Enter]
```

Even better, use:

```
#mkisofs -v -o
isofilename.iso -J -R /tm/Disc
and hit [Enter]
```

-J is for Joliet extension (for Windows support) and -R is for RockRidge extension. We now have a file (isofilename.iso) that contains all the files we want to write to a CD. Even

downloaded ISO files or the one created in Windows will work. The last stage is to use the “**cdrecord**” command with the necessary switches.

Using CDRECORD For CD-R

You must know the speed of your drive; in our case it is 48x24x48, and also the speed that the CD-R is capable of handling. If the CD-R is 52x and the drive is capable of 40x, then you should burn at a max speed of 40x. And, if the drive is 52x and the CD-R is 32x, then the max speed you can record at is 32x when using “**cdrecord**”. The command with best preferred switches, in our opinion, is:

```
# cdrecord dev=0,0,0
gracetime=2 fs=8m
driveropts=burnfree,noforce
speed -v speed=24 -sao -eject
/tmp/isofilename.iso
```

What the switches mean:
dev=x,x,x: the target drive.
gracetime: the time interval within which you can cancel the execution of burn command
fs=#: the size on FIFO buffer. Number followed with ‘m’ gives size in MB

driveropts= options: there are many options of which we feel **burnfree** and **noforcespeed** are useful

burnfree: turns on buffer underrun protection

noforcespeed: Some drives force a selected speed even if the media is poor, thus resulting in poor write quality. This options allows variable writing speed depending on the quality of the medium.

-v: displays progress of disc writing
-sao: the same as **-dao**, i.e., Disc-At-Once
-eject: ejects the tray on completion or the writing process.

Playing MP3 On Linux

This is very easy provided you take the right download link. We searched in vain through most of the Linux software sites such as freshrpms.net; but all we could get is more dependencies.

To play MP3 on a Linux box, you need to install Xmms player which is a look alike of Winamp player. Download Xmms from softpedia.com: <http://linux.softpedia.com/get/Multimedia/Audio/XMMS-348.shtml>, because it is error free and installs without a glitch. On completion of download, use the command:

```
#rpm -ivh xmms-1.2.10-1.i386.rpm
```

and hit [Enter]

Xmms lists itself in the Start Menu under **System Setting > Multimedia > XMMS**. You can also use the command “**xmms &**” at the shell prompt to run it.

Using CDRECORD For CD-RW

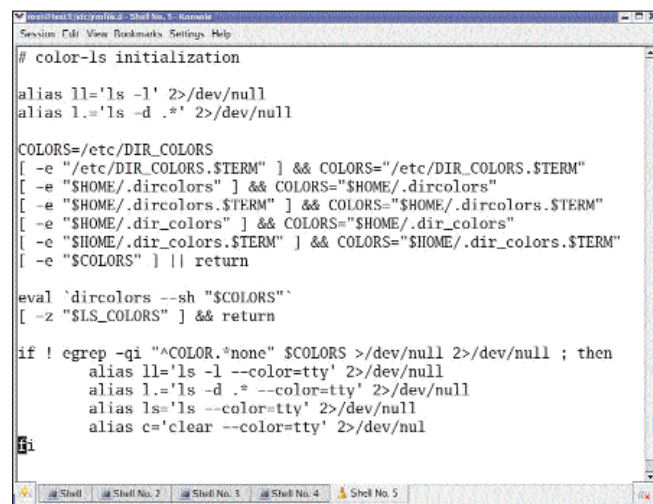
There isn’t much difference in dealing with CD-RW except that you can erase the content of the media and the max writing speed doesn’t exceed 24x. So, check if the CD-RW media contains any important data before you proceed to erase it. To erase the disc:

```
# cdrecord dev=0,0,0
blank=fast
```

and then hitting



Winamp on Linux!



Creating a permanent alias

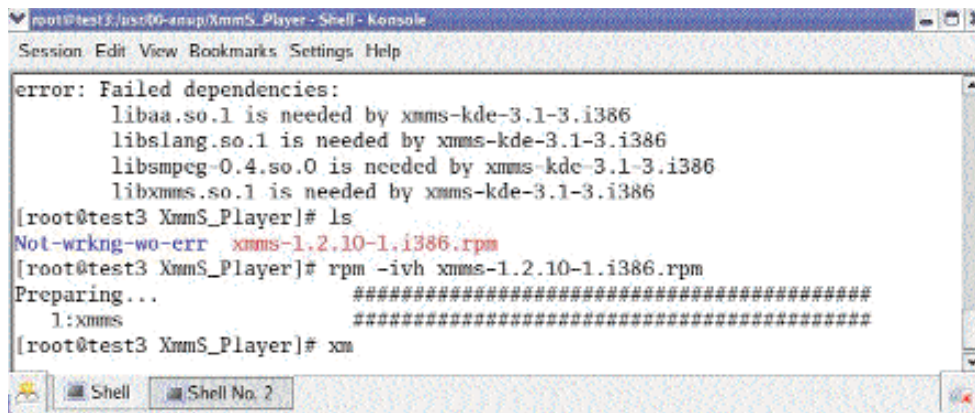
[Enter] is the fastest and most common usage. Alternate switches (blank=) are:

all: erases entire disc,
takes along time
track: erases a track
session: erases the last session
unclose: opens the last session
In order to write data to

the CD-RW, follow the instructions used in the CD-R, but take care to specify the correct writing speed. Check your Rewritable media for the maximum rewriting speed possible.

Creating Permanent Aliases For Commands

We use certain commands frequently; some are very long and irritating to type in again and again. You could use the ‘**alias**’ command to assign aliases, but the result is temporary. Let’s be smarter, hack a script file, and set permanent aliases for such commands.



The list of commands that get executed when you’re trying to install Xmms

For our example, we’ll take the command ‘**clear**’. We use this command very frequently and many a time, it bugs one to re-type it! Let’s set ‘**c**’ to perform the function of ‘**clear**’. The temporary method is to use the command **#alias c=clear** and hit [Enter].

Change your directory to **/etc/profile.d** and open the shell script named ‘**colorls.sh**’ in a text editor. Look for the line “**alias ls='ls -color=tty' 2>/dev/null**” and copy and paste this line under itself. Now on the line pasted, replace ‘**ls**’ with ‘**c**’ and ‘**ls -color=tty**’ with ‘**clear -color=tty**’. The edited **colorls.sh** file should look as in the screenshot above. Now open the terminal or konsole window, hit [Enter], and then [C] to check if the alias works. The alias should work even if you reboot your machine. ☑

Q&A

Your Questions, Our Answers

Helpful Warnings

Q I have Windows 2000 Professional installed. Whenever I'm connected to the Internet, a message flashes, stating either that a worm has been detected, or that there's a problem with the Registry. It advises me to visit some Web sites and download Registry repairing software, and says my system will be damaged if I don't. I want to know whether these messages are genuine. I have the latest version of Norton AntiVirus, and it does not detect any viruses.

Debabrata Rout

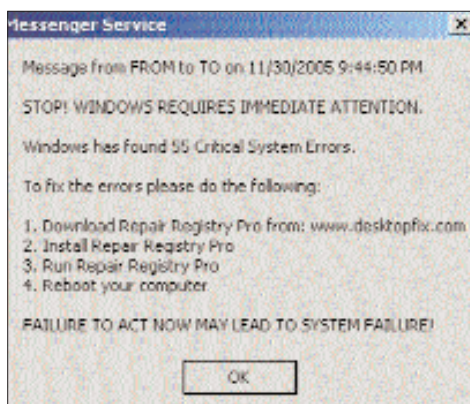
A Your computer is infected not by a virus or worm, but by some form of spyware or adware. Many of these are not detected by anti-virus programs. You need to install anti-spyware software to get rid of these.

Microsoft AntiSpyware from www.microsoft.com and Spybot-S&D from www.safer-networking.org/en/ are good (and free!) anti-spyware applications to start with. Alternatively, you might want use paid anti-spyware applications such as Ad-Aware SE from www.lavasoft.com.

Install one of these programs and update the spyware and adware definitions file from the respective Web site, and thoroughly scan your hard drive for spyware and adware. You might need to install more than one anti-spyware software to remove all spyware or adware applications installed on your computer.

Note that some applications, such as the DivX Create Bundle, require the adware bundled with them to function properly—make sure you're deleting only unnecessary adware!

When you've got spyware on your computer, Windows might display a warning like this one



AGP Blues

Q I have a GeForce2 MX400 64 MB graphics card. My problem is that this AGP card does not support any of the latest games. I updated the BIOS and installed the latest display drivers and DirectX 9.0c. My graphics card BIOS version is 3.11.0124.

Renju R

A The nVidia GeForce2 MX400 chip is DirectX 7 compliant. It does not have the features required to run games written to take advantage of certain features that can only be found in graphics chips supporting higher versions of DirectX. Some such features are Pixel Shaders and Vertex Shaders—most of the newer games use these features, and hence they will not run on this card, unless the game allows running in a lower mode that uses DirectX 7.

Installing DirectX 9.0c and the latest drivers will not solve this problem either. The only remedy is upgrading to a newer AGP graphics card supporting DirectX 9, such as those in the GeForce FX and 6x00 series.

Fine Card, Broken Graphics

Q I have a Pentium III 1 GHz with Windows XP SP2, 256 MB of RAM, and a GeForce4 MX 4000 128 MB with Forceware version 77.72 connected to an AGP 4X slot. I have DirectX 9.0c installed.

In almost all the games I play, the graphics appear broken into triangles—especially text and moving objects. All the settings are at their defaults, and the DxDiag tests all run fine.

I never experienced this problem until recently. I even tried keeping all the graphics settings at their lowest values, but the problem persists.

Aslam Kamal

A The problem you're facing—and also other problems such as texture bleeding, flashing triangles and corrupted textures—often happens due to improper AGP aperture size. The AGP aperture size is memory that has been reserved from your system RAM for graphical processing. This takes the RAM out of use for you and your operating system.

The problem can be remedied by changing the AGP aperture size. You will have to experiment with different values until you find one that suits you.

You can only change the AGP aperture from the BIOS. It can usually be accessed under 'Advanced Chipset Features', depending on the BIOS manufacturer. It can be set to values such as 16, 32, 64, 128 and 256 MB. Different motherboards allow different settings—for example, i815 motherboards will not allow you to set the aperture size above 64 MB. As a rule of thumb, set the value to half your system memory for optimal performance.

The problem you've described can also occur if your graphics card is damaged, in which case you'll have to get yourself a new card.

Alternative Usages?

Q I have no DVD-ROM drive on my computer. However, I have a Philips DVD video player (DVD623K). Is there any way I can connect my Philips DVD to my computer and use it as a DVD-ROM?

Arindam Dutta Roy

A Unfortunately, you cannot. Even though your DVD player can read DVDs, its firmware (chip inside your DVD player) is not programmed to read data discs, only movie and MP3 files. Even if you can get your DVD drive to read data discs, there is no way you can connect it to your PC to pass on digital data.

Invalid Key—No Probs!

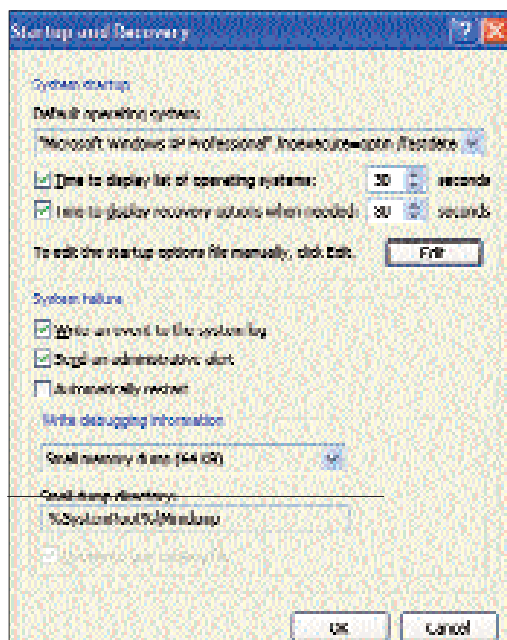
Q I recently created a Windows XP Professional SP2 bootable CD as described in *Take A Crack* in your March 2005 issue. My problem is that Setup accepts any Product Key, even blank spaces and semi-colons. Setup proceeds even when I keep the Product ID field empty and click 'Next'. And after the 'Get Updated Files' screen appears, it generates an error that says that the wizard cannot continue. What do I do about this?

Adarsh Akhilesh

A It looks as though either the Windows XP setup files you used or the CD that you created is corrupt. This could happen if the version of Windows XP you're using is pirated. We suggest you use the Windows XP setup files from the legal copy of Windows XP that you purchased. Also, try burning the CD at a lower speed such as 16X.

Seeing Double

Q I have Windows 98 SE and Windows XP Home Edition installed on my system. I formatted the



The Windows "Startup Options" dialog

drive that had XP on it and re-installed XP. Now, when Windows starts up, I get two Windows XP Home Edition names on the opening screen. How do I delete one of them?

Sanjairaj

A Since you had a dual-boot system, we assume you had Windows 98 SE on the C drive and Windows XP Home on, say, the D drive. A dual-boot system such as yours uses the Windows XP boot loader to boot. This is located on the C drive, and there is also the 'boot.ini' file, which resides in the root of this drive. The various operating systems that are installed and into which the system can boot are listed in this file.

When you reinstalled Windows XP over your previous installation, though the D drive was formatted, the C drive retained all its files, including boot.ini. This file is updated every time you install a new OS, and an entry for this OS is made. This file must be edited to correctly display just one instance of Windows XP Home Edition in the boot menu.

To edit boot.ini, in the Control Panel, open 'System'. Click on the 'Advanced' tab, and under the 'Startup and Recovery' section, click on 'Settings'. Under 'System Startup' in the newly-opened window, click 'Edit'. This will open the boot.ini in the default text editor. The structure of boot.ini will be something like this:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(2)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS="Microsoft Windows XP Home Edition" /fastdetect
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS="Microsoft Windows XP Home Edition" /fastdetect
C:\="Windows"
```

As you might have noticed in the above, there is a duplicate entry for Windows XP Home Edition under the [operating systems] section. Just delete one of these two lines and save the file.

It is wise to back up boot.ini so if something goes wrong, you will be able to revert to the original settings.

Plug-N-Play?

Q Is there a device or connecting cable available in the market to connect a pen drive directly to a digicam?

Manoj Singhal

A An emerging standard in USB, known as USB 2.0 On-The-Go, enables any digital camera with a USB 2.0 interface to connect to a storage device that conforms to the standard. Devices that conform to this standard can directly connect to a digital camera, and images can be downloaded to the device.



Create Your Own E-Book

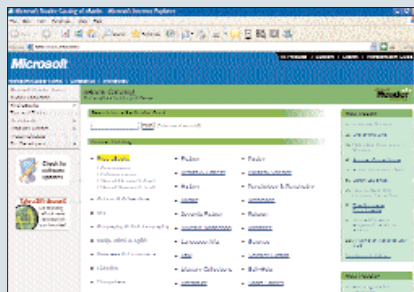
Using a tool from Microsoft, you can convert Word documents into e-books!

Deepak Dhingra

You're probably aware of e-books and e-book readers. An e-book is nothing but an electronic form of a regular book. You can read e-books on your PC, notebook or handheld—you purchase them online and download them to your PC (or handheld), and read them at your leisure. There's also a large number of free e-books you can find on the Internet.

E-books are available in a variety of file formats, and you require some kind of reading software to open the e-book. The software you need depends upon the format of the e-book. A popular reader is Microsoft Reader, which can be downloaded for free from www.microsoft.com/reader/downloads/default.asp for the desktop, Tablet PC and Pocket PC platforms. (Pocket PCs are handhelds running the Microsoft Windows Mobile OS.)

E-books compatible with Microsoft Reader have the .lit extension, and can be purchased online from vendors such as Amazon.com. Microsoft's catalogue of e-books can be found at www.mslib.com, where you can also find links to loads of free e-books!



The Microsoft Reader e-book catalogue at www.mslib.com

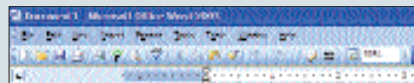
Here, we describe how to create your own e-books in Microsoft Reader format to distribute them over the Web or read them on your own desktop or handheld. This is also useful if you want to view a large Word document on your Pocket PC. Though most Pocket PCs can view and edit MS Word files, they're easier to read while on the move if they've been converted to Reader format. You also get additional features such as bookmarks.

Note here that the conversion to Reader format can only be done on your desktop PC or laptop, not on your handheld. You can, of course, transfer the converted file to your handheld. Also, you cannot edit the files on your handheld.

To create your own e-book in Microsoft Reader format, you need to download and install a free add-in for Microsoft Word from www.microsoft.com/reader/developers/downloads/rmr.asp. The Read in Microsoft Reader (RMR) add-in works with Microsoft Word 2002 or Microsoft Word 2003.

1 STEP Getting Started

Follow the instructions on the above Web page to download and install the add-in on your computer. When you launch Microsoft Word, you will notice a new Microsoft Reader

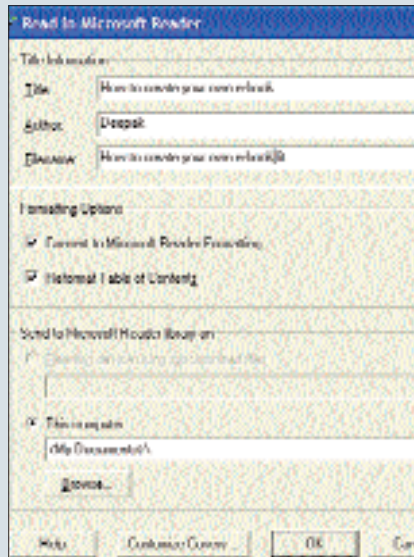


The Reader icon appears on the Word toolbar

icon on the toolbar, and a new Read command on the File menu.

2 STEP Write

Open the Word file you want to convert to Reader format, or create one if you haven't already done so. Save the file somewhere on your computer.



Converting the Word document using RMR

3 STEP Convert

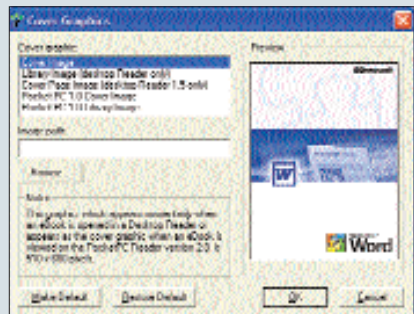
When you have the Word file ready for conversion, click on the Reader icon on the toolbar. In the Window that comes up, you can set various options for your e-book, such as title, author name, file name, etc. You can also choose where to save the file on your computer.

4 STEP Formatting Options

The same window also lets you choose formatting options for your e-book. If you check the "Convert to Microsoft Reader Formatting" checkbox, Word will remove formatting that conflicts with Reader defaults. If your Word file has a table of contents, you can also check "Reformat Table of Contents" to convert it and make it compatible with the Reader format.

5 STEP Choosing Cover Options

Microsoft Reader displays cover graphics for e-books. If you wish, you can customise these cover graphics. If you don't, your e-book will be created with the default cover graphics.



Customising the graphics for the cover

To have your own graphics displayed, click on 'Customize Covers'. You can now choose an image, depending on the type of device you wish to read the e-book on. Click 'Browse' to select a different cover image, and click 'OK' when you're done.

6 STEP Finishing Up

Click 'OK' to begin the conversion process. Your e-book will be created and saved to the specified folder. You're now ready to distribute it over the Web, share it with friends, or transfer it to your Pocket PC for reading while on the move! ■

deepak_dhingra@thinkdigit.com

The Dreaded Missing File Syndrome

Q When I boot into Windows XP Professional, I get an error: "C:\windows\system32\config\system file not found." Windows then stops loading. How can I repair my OS? Is there any way I could allow a Guest to write CDs from their accounts?

James

QUESTION
OF THE
MONTH

A The file 'system' that resides in the 'config' directory of Windows XP's 'System32' directory is part of the Registry. If this file is corrupt, Windows will naturally have problems booting. But you can attempt to repair this error:

1 Insert the Windows XP installation CD and boot through it.

2 When prompted with the "R=Repair" option, press [R].

3 Press the number that corresponds to the correct location for the installation of Windows you want to repair. Typically this will be number 1 if Windows is installed on the C drive.

4 Enter the Administrator password when prompted.

5 Type in the following commands at the command prompt:

```
cd \windows\system32\config
```

```
ren system system.bad
```

```
copy \windows\repair\system
```

6 Eject the CD-ROM and type in "exit".

7 Restart your computer. You should be able to boot into Windows XP properly.

Now for your second query: a user logging on using a Guest account can only view files but cannot modify files in Windows XP. They also will not be able to write CDs.

The MSI MegaView 588, which we reviewed in *New and Notable* in our December 2005 issue, is one such device available in the market.

Accelerating Access

Q My PC configuration is an Intel P IV 530 with HT, Intel original i915GAV motherboard, 512 MB DDR 400 MHz RAM, and a Seagate Barracuda 80 GB hard drive (ST380013AS). The drive supports UDMA-6, but is currently using UDMA-5. Is there a way to make it use its rated data transfer mode?

Mustak Patel

A Installing the Intel Application Accelerator should do it. Since you have an Intel original motherboard, you'll find this application on the driver CD that accompanied the motherboard. You can also download the latest version of Intel Application Accelerator from Intel's Web site, but you must take care to download the version that's meant for your motherboard's chipset and your Windows version.

Now Play
Contest Carnival!
SMS 7827 And
Win Exciting
Prizes!!

Turn to Page 135

Of Codecs And Autorun

Q I have a Celeron 1.2 GHz and a BenQ DVD-ROM running Windows XP. The *Digit* December 2005 movie DVD is getting detected as a data DVD by the DVD-ROM, and I'm not able to view the movie. I want to know whether an upgrade is required for the DVD-ROM, or whether any drivers can help.

Rajdeep Kohli

A There does not seem to be any problem with your DVD-ROM drive. It looks like the Autorun functionality of your drive has been disabled. Some software such as CD-Writing software and virtual machines require the Autorun feature on optical drives to be disabled in order to function properly, and these disable Autorun when they are installed.

Regardless of whether Autorun is turned on or off, you will still be able to view DVD movies, provided you have the necessary DVD player and MPEG-2 codecs installed. Most DVD players such as InterVideo WinDVD

(www.intervideo.com) and Cyberlink PowerDVD (www.cyberlink.com) come with their own codecs, and installing one of these will allow you to view DVD movies using either the player or Windows Media Player.

Squeezing It To The Max

Q Is there any software that can compress 5 to 6 GB of data to 500 to 600 MB?

Kishore Jethanandani

A Compressing 5 to 6 GB of data to 500 or 600 MB means a compression ratio of 1:10, which is extremely high. While not impossible, it's very hard to achieve. It depends on the type of files you're planning to compress—certain file types such as BMP and DOC compress better. There are a host of file compression utilities that can help you compress files to a varying degree of compression. WinZip (www.winzip.com), WinRAR (www.rarsoft.com), WinAce (www.winace.com),

PowerArchiver (www.powerarchiver.com), and 7-Zip (www.7-zip.org) are some of these.

TV-Tuner On Win98?

Q I have a Pentium III 500MHz, a SiS P-II motherboard, 96 MB of RAM, and Windows 98. This system runs fine—I generally use it for music and video. I want to add a TV-Tuner card. But my vendor has expressed doubts as to whether my P-II motherboard will support a TV-Tuner card. He also said that the TV-Tuner cards available in the market do not have driver support for Windows 98. I want to know whether this is true or not.

Srikanth Vavilala

A Any system with at least a Pentium 233 MHz and 32 MB of RAM will support a TV-Tuner card for viewing purposes. The dealer must have meant that capturing live TV might not be possible on your system, and that is true. Most, if not all, TV-Tuners—such as the Compro Videomate PVR and PVR/FM cards—still support Windows 98. You'll be able to find the drivers on the Internet. ■



Get Help Now!

E-mail us your computing problems along with your contact details and complete system configuration to sos@jasubhai.com, and we might answer them here! Since we get more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!

Agent 001 On A Display Run

What does Agent 001 do when he takes a fancy to games? Look for a graphics card, of course!

Lately, I have taken up a serious liking for computer games, spending most of my time racing and fragging. The new breed of games such as *NFS Most Wanted*, *Age Of Empires III*, etc. are brilliantly made and demand to be played more. My office machine, with the 6800GT, is powerful enough to run them in their full visual glory; sadly, the same cannot be said about my home machine, which runs on anaemic Nforce2 graphics. I decided it was time to upgrade my graphics card at home.

When it comes to these beasts, the choices are virtually infinite—choosing the right one is always a problem. Moreover one has to pay close attention to critical features such as Pixel Shader, Vertex Shader, the number of pipelines it supports, etc. In the near future, operating systems such as Windows Vista will depend heavily on the graphics sub-system to run their visual-heavy interface, so if you're considering buying a graphics card, make sure it is compliant with the needs of this new OS. The minimum requirement is that the card should be DirectX 9.0 compliant and we strongly suggest you to keep some headroom, or be prepared to upgrade to a new card later.

As of today, two companies (nVidia and ATi) have competing products in the graphics cards category. Both companies have chipsets in different series that cater to various market segments. The newer chipset cards are based on the PCIe technology and are hardly available on the older AGP standard; this might pose as a problem for people with AGP motherboards. One more thing to keep in mind is the SLI (Scalable Link Interface) technology from nVidia and CrossFire from ATi; these technologies allow you to install two graphics cards for improved performance. The thing to remember is that both these technologies require special cards, hence if you plan to use two cards, make sure you buy the appropriate ones.

Arriving at Lamington road, I went straight into a small shop. I asked for an entry-level graphics card and was offered some based on the MX-4000 chipset from nVidia—stay away from these cards. I asked for something better and was offered two cards, one based on 6200 TC chipset and the other based on X300SE. Today, if you want an entry-level card, you should settle for cards based on these two chipsets. The XFX 6200 TC 128 MB card retails for around Rs 4,500, whereas a PowerColor X300SE-based card will set you back by about Rs 3,500.

I moved on to the next shop and enquired about mid-range graphic cards retailing at

Operating systems such as Vista will depend heavily on the graphics sub-system to run their visual-heavy interface, so if you're considering buying a graphics card, make sure it is compliant with the needs of this new OS

between Rs 5,000 and 10,000. This range is completely dominated by nVidia's 6600-based cards. ASUS, MSI, Gigabyte, XFX, etc. have products based on the 6600 chipset. The cheapest card based on the 6600 chipset is from XFX and it retails for as low as Rs 5,000. There are two variants of this chipset, namely the vanilla 6600 and the 6600GT. The 'GT' versions retail at between Rs 7,000 to Rs 10,000 depending on the features and memory they have.

The expensive cards based on the 6600GT chipset have 256 MB of onboard memory. The general misconception is that the higher the memory the better the performance; while that might be true for high-end chipsets such as the 7800 GTX, it's not true for the 6600 chipset. The reason here is that the 6600 chipset is just not fast enough to utilise the extra memory. I would say 128 MB is more than enough for these cards—and you should increase your main memory with the money you save. ATi fans need not worry; in the mid-range you can go in for the X800 GT chipset based cards, they retail for around 10K for PowerColor branded cards.

High-end cards are a rare sight, and the dealers will order one only if you are interested in buying it. However, they provide all the necessary product information. Upon enquiring about the best card money can buy, I was offered cards based on the 7800 GTX chipset. "What about the X1800 chipset?", I asked. "They haven't made it to the Indian market yet," came the reply.

ATi recently launched a new series called the X1000 series, consisting of the X1800, X1600 and X1300 chipsets. The X1800 is the top-of-the-line ATi card, which is in direct competition with nVidia's 7800 GTX. The X1600 goes head-to-head against the 6800 and the X1300 competes with the 6600 GT.

The XFX 7800 GTX retails for around Rs 32,950, whereas MSI has cards on the same chipset that retail for Rs 35,000. If money matters and you still want to enjoy games at high resolutions, I'd recommend you opt for cards based on the 6800GT; they sell for around Rs 18,950.

During my short trip, one thing was quite clear; nVidia seems to be the favourite amongst the dealers. If you are an ATi fan, you will have to do some homework before you can buy a card, since vendors are not as conversant with the ATi product lineup as they are with nVidia products.

After a lot of pondering I decided to invest in a 6600 GT-based card. I got myself an XFX 6600 GT with 128 MB memory for Rs 7,500. ■

Want more of Agent 001? Turn over to read his answers to your buying questions

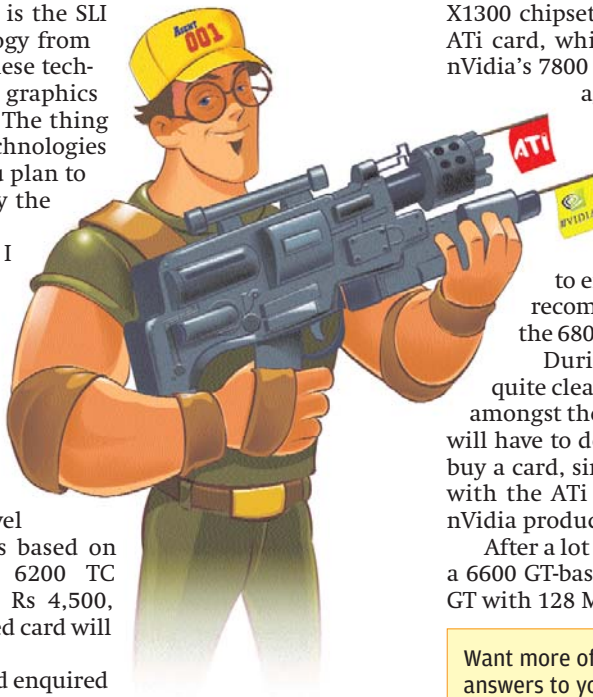


Illustration Pradip Ingale

MP3:Keep It Simple

Q I want to buy an affordable MP3 player costing around Rs 5,000 that can store 50 to 100 songs. I have never used a MP3 player before, so would like to get one that's simple to use.

Abhimanyu Dogra



Any flash-based MP3 player will do for you. I would suggest the iRiver T30 256 MB player; it is reasonably priced (Rs 5K) and offers good performance. Your other option could be MSI's MegaStick 512 MB, which offers double the capacity and equally good performance for nearly the same price. If you like Apple products, go for the iPod Shuffle 512 MB (Rs 5K). The only major difference between the iPod Shuffle and other products is the lack of a display screen on the former. As far as using these devices go, don't worry—they are designed to be simple to use.

A Massive Overhaul

Q I have a Compaq Presario 6000 with a Pentium IV 1.7 GHz, 512 MB memory, etc. I want to upgrade it to an AMD 64-bit dual core processor and also add in a better graphics card. Considering I already have a monitor, keyboard, mouse and speakers, can you suggest me a good processor-motherboard combo and a decent graphics card? My budget is around Rs 50,000. Also, do I need to buy a new cabinet and a power supply?

Ajitem Sahasrabuddhe



I'm assuming you have DDR memory. You'll have to wait for AMD dual-core processors—they are a rarity in the Indian market. Regarding the motherboard, I would recommend either the Asus A8N32-SLI Deluxe or the MSI K8N Diamond Plus, based on the nVidia nForce4 SLI X16 chipset. Both these boards are top-of-the-line, and have almost all features you'd expect.

You will need to buy a new power supply, as these motherboards require a 24-pin power connector. If you want to build a good machine, invest in a good power supply—for example, an Antec. As far as graphics is concerned, settle for a card based on nVidia 6800 or 6600 GT. All these components should fit within your 50K budget.

A Media Center Laptop?

Q I want to buy a new PC complete with the latest features and which offers good performance. I came across the new HP m7280IN PC in the newspapers, but it's pricey. Can I get a laptop with all its features for the same price? Also, can I *assemble* a good machine with the those features within a modest budget?

Manish Chandnani



The HP m7280IN PC you've mentioned is a Media Center PC. It is designed to converge the PC with your TV and hi-fi stereo. Since Microsoft doesn't sell the Media Center edition of Windows XP in the retail market, assembling a Media Center PC is not possible.

Comparing a laptop with a Media Center PC is not possible—these are targeted at different audiences. It is possible to assemble a PC better than the m7280IN for the money it retails for; however, don't expect the package to look as good as the

Since Microsoft doesn't sell the Media Center edition of Windows XP in the retail market, assembling a Media Center PC is not possible

m7280IN does. We have reviewed this HP PC in our January 2006 issue.

Of AGP, 64-Bit, And DDR II

Q I want to buy a motherboard with an AGP slot. It should support 64-bit AMD processors as well as DDR II. I prefer MSI, but are there are better products by other manufacturers? My budget is around Rs 5,500.

Vishnu



There are lot of motherboards for AMD's 64-bit processor supporting an AGP slot; however, none of them will support DDR II. The 64-bit AMD processors have the memory controller built into the processor itself, since it currently only supports the DDR I standard.

There are rumours about new AMD processors with DDR II controllers to be launched this year; you might therefore get a board for your purpose.

I'd suggest a PCIe-based board instead of an AGP. Go in for motherboards based on the nVidia 6150 or ATI RS480 chipsets. The onboard display adapters on these boards will be definitely better than your older card. Moreover, since they support PCIe, they'll future-proof your investment.

Apples Are Red, PCs Are Blue...

Q I am interested in photography and designing work, and I will be using Photoshop and other designing software. Please advise a system configuration that's best for my work. I have a budget of around Rs 50,000. What would be better—an LCD or a CRT monitor, and why? What is the difference between Apple and PC? Is Apple better for graphics purposes?

Niranjan Kumar



Refer to the table below for your PC configuration. For your kind of work and your budget, I'd recommend a 19-inch CRT monitor, simply because it is relatively cheap and reliable.

Apple products are based on a completely different architecture from that of PCs, and require very different software, specifically developed for Apple computers. Since their inception, Apple products have been widely used in the designing industry, which led to optimisation of the hardware and software for that very purpose.

There are perceptible performance differences between Apple computers and PCs when it comes to displaying colours, processing data in Photoshop, etc. But due to its proprietary nature, Apple products tend to be expensive and out of reach for most. ☐

A Computer For Design Professionals		
Component	Make	Cost (Rs)
CPU	AMD 939 pin Athlon64 3200+	9,000
Motherboard	MSI K8NGM2-IL or Gigabyte	6,500
RAM	512 MB DDR 400 Hynix	3,500
HDD	160 GB SATA Samsung/Seagate	4,350
Monitor	19-inch Acer or Samsung 997-DF	~14,000
Keyboard	Logitech	300
Mouse	Logitech Optical Mouse	300
Cabinet	Any cabinet you like!	700
Power Supply	Antec / VIP 350 W power supply	3,500 / 2,000
Optical Drive	LiteOn / Sony Combo drive	2,750
Speakers	Creative Inspire 2.1	2,400
Total		~46,550
Graphics Card	XFX Geforce 6600 card	6,000

**Ask Away!**

Want a tech product, but don't know how to go about buying it? E-mail agent001@thinkdigit.com with your complete contact details, and he might answer them here! Please note that Agent001 only answers purchase-related questions in this space.

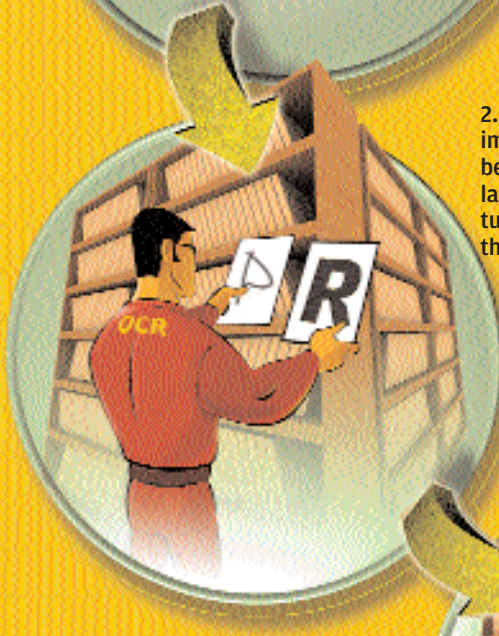
How OCRs Work

The Matrix Matching Method

1. Text—this may be a handwritten or typed out document—is given to the OCR software in the form of an Image. It now has to turn this image into actual text.



2. The OCR software breaks the image into a grid to analyse it better. It then looks through its large database of letter structures to match the segments in the grid.



3. Once it has found a likely match, it tells the user what it thinks the letter is.



The Feature Extraction Method



1. Once again, the OCR software receives text as an image

2. The software analyses the letter for special features like curves and horizontal or vertical lines. 'T' is easily recognized because of the intersection of a horizontal and vertical line; 'A' has the triangle in the middle, and so on.



3. It compares this with all the knowledge that it has been programmed with about letter construction, and arrives at a conclusion about the letter.



4. Once it has a match, it gives the letter to the user.



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Digital Business

How Technology Can Help Your Organisation

Smart Business

@ccess Over The Airwaves

Data cards offer you wireless connectivity over mobile networks, but do they offer the kind of speeds you need?

Philip Malayil

About a decade ago, we were awed at the climactic sequence in Mission Impossible (the original, not the sequel) in which a top-secret list is transmitted from a laptop on the London-Paris TGV—France's high-speed railway. Wireless Net access has certainly become more commonplace! Mobile data access is now increasingly seen as an efficiency enhancer by large and small businesses.

Take the example of a marketing executive of a large corporate. Apart from being e-mail enabled, he also needs to access the company intranet from various locations within the country or even abroad. Wi-Fi is one of the answers to such needs.

Wi-Fi And WiMax

Wi-Fi implements the Wireless LAN specifications detailed under section 802.11 by the IEEE. It envisaged the creation of areas from where one's computing device could access the Internet. However, Wi-Fi penetration in India is largely limited to offices, airports, five-star hotels, and in some cases, university campuses. A notable exception is Bangalore with its public Wi-Fi centres.

Perhaps future implementations of WiMax will finally allow us to have *real* "anytime, any-



▼ Handset Connectivity

You don't necessarily need data cards to be mobile. You could always use a regular phone-to-laptop data cable, or Bluetooth, and connect via GPRS or CDMA.

GPRS (GSM's wireless data technology package) plans cost as little as Rs 150 per month in some post-paid schemes, going up to approximately Rs 600.

Though real-life speeds for GPRS are reported to be just 56 to 96 kbps, costs are generally not linked to usage time or data transfer, so this works fine for the casual surfer.

Most CDMA (Code Division Multiple Access) handsets have an inbuilt modem, so once it's connected to your laptop, you can dial up and get online. Some users have reported download speeds for CDMA handsets to be about 120 kbps.

where" broadband access. But what options do we have until that rosy picture materialises?

The Mobile Revolution

With the Government delicensing some frequencies in the 2.4 GHz and 5.1 GHz range, the number of public access hot spots are set to mushroom. Meanwhile protocols such as WAP, GPRS, EDGE, and CDMA offer mobile access solutions.

Typically, we access the Internet over these technologies by connecting our phones to our desktops or laptops and dialling up. This can often be a frustrating experience—for example, what if your phone's battery goes dead in the middle of a browsing session? If your phone isn't Bluetooth-enabled, you've got to deal with a mess of cables. And do you really want your phone balancing precariously on your knee while you're in a train?

Enter The Data Card

Slotted into the standard type II PCMCIA (Personal Computer Memory Card International Association) card slot in notebooks, data cards offer wireless connectivity over the mobile phone network. With a data card, your laptop can be used to make and receive voice calls and SMSes as well. In short, data cards function as modems while also mobile phone-enabling your laptop. They offer you the option of just clicking an icon on your Desktop to get connected.

At one point of time, data cards weren't an affordable option for most people. But that's changed. If there were an equivalent of Moore's law for hardware pricing, data cards would

more than satisfy it. A card that cost about Rs 14,000 to 17,000 in June 2005 now costs about Rs 6,500. Data cards are available from Reliance Infocomm, Airtel, Tata Indicom and Hutch.

Data card vendors point out the cost advantage over Wi-Fi in hotels for the business traveller. But though data cards may lose miserably when it comes to speeds, there's just no competition when it comes to actual mobility. Wi-Fi and WiMax just don't have enough of a presence to compete with data cards.

In addition, service providers claim that data cards will free us from the problems associated with dial-up connections such as time-outs, blackouts and frequent disconnections.

▼ UMTS

Universal Mobile Telecommunications System represents an evolution in terms of capacity, data speeds and new service capabilities from second-generation mobile networks. Using W-CDMA radio access technology that builds on GSM, it provides a clear evolutionary path for more than 80 per cent of the world's wireless market to offer speeds of up to 2 Mbps, and all the benefits of broadband connectivity while on the move. The protocol was evolved by a global alliance of telecommunications standards bodies headquartered in France.

CDMA vs. GSM Data Cards

As against the claimed speeds of 144 to 153 kbps for Tata Indicom and Reliance data cards, both of which use CDMA, Airtel customer support promises 247 kbps for its GSM/EDGE data card. Hutch, the other GSM player, claims just three times the speed of GPRS.

GPRS usually offers lower data bandwidth when compared to CDMA's high-speed technology 1xRTT (short for single carrier radio transmission technology), which has the capability of providing Integrated Services Digital Network (ISDN)-like speeds of as much as 144 kbps. However, 1xRTT requires a dedicated connection to the network for data transfer, whereas GPRS sends packets, which is why data calls made on a GSM handset won't block out voice calls like they do on CDMA phones.

Also, data transmission over CDMA is traditionally considered more secure than GSM, which allows multiple users to share the same channel.

An official from a leading CDMA player wrote off the EDGE (Enhanced Data for Global Evolution) claim of 247 kbps by questioning the number of EDGE-enabled towers. In Mumbai, for example, he said, the speeds at, say Nariman Point and Vashi may differ widely when EDGE "falls back" to GPRS (See box *EDGE To GPRS Fallback*). CDMA, on the other hand, he said, promises a uniform pan-India experience. While admitting that speeds would be inversely proportional to the volume of traffic handled by a particular tower, he stated 70 kbps as the actual average speed one can get with a CDMA data card.

But GSM still has the advantage of global connectivity. Of the 36 countries and 49

▼ Cost And Plan Charges

	One-time Cost	Monthly Charge (Rs)	Data Usage Cap
AirTel	12,999	399	100 MB
		599	1 GB
		799	1.5 GB
Hutch	12,000	499	100 MB
Reliance	6500	650	1 GB
		900	1.5 GB
		1,500	Unlimited
Tata Indicom 9995		700	1 GB

EDGE To GPRS Fallback

An EDGE data card can offer high speed connectivity only within range of an EDGE tower. When the user moves into a neighbouring cell site that may not be EDGE-enabled, data access speeds "fall back" to GPRS levels.

networks that the Hutch data card offers GPRS roaming in, almost 18 are in the "Pre-Commercial" stage, which, according to the Hutch Web site, means one would not be charged for international roaming as of now.

The Next Step

Increased speeds will only come with 3G, which is yet to be rolled out in our country (see box 3G). In the US, EVDO (Evolution Data Only) and EVDV (Evolution Data Voice) 3G have offered real speeds of 180 to 300 kbps, with bursts of 500 kbps.

The GSM counterpart, EDGE, doesn't seem to be quite up to speed—100 to 130 kbps with bursts of 200 kbps. When Universal Mobile Telecommunications System (UMTS) succeeds GSM (see box UMTS), speeds of up to 2 Mbps are promised.

Is It For You?

From all we've talked about, you're probably not sure whether or not to opt for a data card. The

3G

A group of multinational wireless communications companies have banded together to develop and promote high-bandwidth third-generation (3G) wireless technology. The group, which goes by the name of 3G.IP, includes AT&T Wireless Services (now merged with Cingular), British Telecom, Ericsson, Lucent, Nokia, Nortel, Telenor AS, and Telecom Italia Mobile.

Mobile telephony and the Internet converged to create third-generation mobile services. The first commercial 3G service was rolled out by DoCoMo in Japan in 2001.

3G services combine high-speed mobile access with Internet Protocol (IP)-based services. Technologies such as W-CDMA (wide-band CDMA), CDMA-2000 and TD-SCDMA are deployed to enable access to information, media and entertainment, anytime, anywhere.

main factor is convenience—freedom from cables, disconnections, and so on.

Another issue is that of the price of the card itself: the table above (*Cost And Plan Charges*) should help you in your cost analysis.

Some also speculate that service providers might offer priority access to data card customers, since they would fall in the "business users" category. ☐

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- 8 USB 2.0 ports



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SEARCH

To Err is Human...

...to take
advantage of
errors,
profitable!

Nimish Chandiramani

So you've taken your business online. And you've made a pretty decent site of it, too. Now, you want customers. What do you do? Why, make sure that it's on the first page of a Google search, of course! Your probable feeling of déjà vu is forgivable—yes, we did carry an article on Search Engine Optimisation (SEO) not too long ago (November 2005, to be precise), but this isn't it.

Top spot on Google doesn't come easy—you have other businesses to compete with, and if your keywords are the same as those of many other businesses (and admit it—they are), you might not end up on the first page even if you've optimised your site to the hilt. Now what? Well, you could cough up for Google's AdWords or similar services, couldn't you? Or if your wallet pinches, you could just resign yourself to the fact that you're never going to get that coveted search rank.

Perhaps you are one of the Lucky, and your site is in the first few results on a Google page. There is still a chance that you're losing traffic, though. You are, after all, catering to humans, and nobody is safe from that dreaded *faux pas*, the typi... oops... typo. Is it 'receipt' or 'reciept'? The unfortunate truth is, many don't know. So chances are that you are losing a goodish number of your potential customers because they either don't know how to spell what they're looking for, or that they just mucked up while typing on their keyboards (the keys are just so close together!).

True, search engines do come up with a "Did you mean to search for ..." warning, but this isn't always so. Try searching for "kasino", for example.

Can You Take Me Higher?

We don't encourage givers-up here at *Digit*; we'd rather you fight for your customer, even the grammatically challenged ones. The solution to it all is quite simple, really. When you are going through the whole process of SEO, all you have to do is optimise your site for common typos as well. This way, your site will show up in a search even when customers misspell keywords. In fact,

it is more than probable that you'll be higher on the result list!

For example, "Grammar Gorillas" is the top result on a search for "grammer", but fifth on a search for "grammar". Even if you consider the "kasino" example in Google, look to the right and you'll see ads for online Casinos. Now if they could do it for the ads, why can't you do it for your site?

So as part of your SEO, do your research—once you have decided on your search keywords, trawl the net to see which ones are among commonly misspelled words. You could also use tools like the keyword typo generator at www.SEOChat.com or www.keywordsfinder.com to give you a list of possible typos for your keywords.

For example, we typed "keyboard" into the typo generator on www.SEOChat.com, and this is what it came up with:

keyborad ieyboard oeyboard leyboard meyboard ketboard keuboard kehboard keynoard keygoard keyvoard keybiard keyblard keybpard keybosrd

Some of these seem a little silly, but that's because the typo generators don't work with grammar. The typos are based on the closeness of the letters on keyboard—you'd invariably end up typing 'I' when you *really* wanted 'O'. Another common way to end up with a typo is jubmbling up the letters.

Simple, isn't it? Well, no.

Flashback

Before we move ahead, let's take a look at a few SEO tips. First up, choose your keywords well. Something generic like "hardware" will get you nowhere. Try "hardware supplier [your city]" or something like that—a key *phrase*, rather, which will bring your site up on a more specific search. Once you have chosen your keywords, weave at least one—and at most three—of them into your page title. This will be the **TITLE** HTML tag on your page.

Next in line is the Meta tag, which contains the keywords and a short description of your site. In the years B.G. (Before Google), a Meta tag would play a major role in your site ranking on a search, but this has diminished somewhat. Still, you

should pay attention to what you put in your Meta tag. It looks something like this:

A Description Meta:

META NAME= "description" content= "Insert site description here, preferably less than 250 characters long."

A Keywords Meta:

META NAME= "keywords" content= "keyphrase 1, keyphrase 2, keyphrase 3, etc."

Another place you could put your keywords is in the "ALT" attribute for images. The HTML code for image placement looks like this:

<IMG SRC= "myImage.gif" width= "10" height= "10" alt= "This is text that appears as a tooltip, or in place of the image if it isn't loaded by the site. Good place for keywords."

Finally, make sure that your pages have at least 200 words of content, with your most important keywords used often (not often enough to turn the content into nonsense, though).

This site sucks!

Forgive us. We've neglected to mention that optimising your site for typos might actually involve you putting those typos in your site text. "What?" you might ask, "Pollute my site with crude grammar?" So this is the first hiccup. How do we work in these typos into our site without looking like a shabby, unprofessional company?

Well, we don't. Obviously, we won't advise you to look silly with the word "plubishing" running around your DTP company's site. We turn to the Meta tags to aid us here; yes, search engines today do use more complex methods to index sites, but the good ole Meta isn't dead yet. If your site's keywords aren't among the most popular terms searched for on the Net, you might be able to get away with just this tactic. Unless, of course, too many other sites thought of the same thing.

The next option is a little better, but is a slightly bitter pill—you need to put the typo in your text. Don't just throw it in anywhere, though. You need to plan it so that the likelihood of it ever being discovered is minimised. Obvious typos convey the impression of being unprofessional, and can be a huge turn-off for many. However, putting it in the page footer or the "ALT" text for an image is somewhat forgivable. You could also change the font colour so it's nearly invisible. We only recommend this approach in case of emergency—if the keyword you're looking to employ is extremely popular and you get no results from the Meta option above.

Why you little \$#@%#!

It isn't difficult to guess that this is a pretty offbeat strategy—which, like all offbeat strategies, is quite likely to be met with accusations of trickery and debauchery. Taking advantage of people's typos like that? Blasphemy!

Or just smart business? Honestly, ask yourself—how many times have you wanted to type in "the", and ended up typing "teh"? Or how many times you've wondered whether it's "independ-ence" or "independance"? (It's the first, by the way) Let's face it—nobody's perfect. Optimising your site for typos not only gives you the added

How do we work in typos into our site without looking like a shabby, unprofessional company?

advantage of being higher on a search list, it's also great for the customer. "Cool!" he/she would say, "I got what I wanted in spite of my silly mistake!"

There are some things you need to keep in mind before you go ahead, now.

First, look through the keywords you've decided on. Are any of the important ones easy to mess up? Long words usually are. Ditto for words with the 'ie' combination—"Is it 'ie' or 'ei'?" It's a mystery. The point is, don't bother optimising your site for words that, in all likelihood, will not be misspelled.

Second—and very important—make sure that the typos you optimise for are relevant. Nobody's going to like it if your hardware dealership site turns up on a search for "flowers". To see such skulduggery in action, type "webligs" (an easy typo to make when looking for "weblogs") into Google, and take a look at the fourth result—it directs you to a site that sells prescription drugs!

Third, don't go overboard—under any circumstances, do not let the typos on your site be obvious. Remember, what you want customers to think is that your site is smart enough to know what he's looking for, not that you're trying everything to draw him in. For a taste of some good old desperation, type "kasinop" (you might end up with this when looking for "kasino") into Google, click on the very first result. It looks quite harmless initially; but scroll down, and the story is a tad different.

Finally, as far as possible, try to restrict the typos to the Meta tags.



Just your regular, run of the mill Indian Gambling Site



Aargh! Half a page of typos! There's no escaping this site!

Stand Fast

With some careful thought, you could considerably boost your business with little or no additional cost. It is important, though, to keep your ear to the ground—any hint of a negative response entails another look at your strategy.

Goos Luk. ☐

nimish_chandiramani@thinkdigit.com

CRM Outsourcing: Is It Worth It?

Should you depend on a call centres' expertise or your own employees' knowledge of your company?

Outsourcing customer service has been to our advantage

The State Bank of India has been involved in Community Services Banking since 1973. Besides personal banking, their services range from agricultural banking to NRI services. SBI has been voted third among the most inquired brands in 2005 by a survey conducted by agencyfaqs.com.

"We started outsourcing our customer relationship management (CRM) needs via a small call centre that attended to the needs of our customer service department. This has now developed into a full-fledged, inbound call centre, where all customer queries pertaining to ATMs and debit cards are attended to. Besides, we also answer banking queries such as those on



Syed Shahabuddin
Chief general manager (IT)
State Bank of India

"By using the services of established call centres, we benefit from their core competence"

facilities for loan disbursements.

"Why did we decide to outsource? Well, the 24x7 nature of our operations, the ease that outsourcing allows, and the availability of trained labour were a few factors that influenced our decision. Moreover, established call centres regularly update themselves and keep abreast with new CRM techniques. We found them competent, and they have the requisite expertise to handle customer queries. By using their services, we benefit from their core competence.

"I must say, in the first six months of having outsourced our customer service requirements, it has been to our advantage. Also, when we invested in outsourcing, it was done keeping in mind the future course of our CRM activities—which includes outbound services, lead generation, phone banking, as well as providing all the services we do in our physical banks today.

"Security is indeed a concern when we are outsourcing, and once we start phone banking, we will allow call centre agents to access only select data. Our screening processes are rigorous, and it starts right from when we hire call centre agents. Also, sufficient checks and balances have been built-in, so that only the need-to-know type of information is available to the call centres.

"We've made the requisite security provisions. To avoid any misuse, logging and tracing of every caller and receiver will be possible."

Using our own employees for CRM is a far better option

LG Electronics' presence in India includes its consumer electronics, home appliances, and IT and telecom divisions. It is a wholly-owned subsidiary of LG Electronics, South Korea, and was established in India in January 1997. Today, the company is one of the fastest-growing consumer durable brands in the country.

"The CRM function, per se, is crucial to the consumer durable industry, which is totally sales-oriented. Companies generally invest widely in brand building and focus largely on point of sales. This does not result in recommendation sales and re-purchase.

"To have a successful long-term sales strategy, it's essential to build the concept of loyalty. Having a dedicated in-



Girish Bapat
Vice president, marketing
LG Electronics India Ltd

"Having a dedicated in-house team to execute CRM activity helps ensure customer satisfaction"

house team at an all-India level to execute all CRM activity helps ensure customer satisfaction. We have an in-house CRM department that caters to all our customer relationship management functions.

"Having our own employees—who are so familiar with our company policies and ideologies—conduct CRM activities is a far better option than outsourcing it.

"Our core CRM team is in Noida. We have a toll-free number and can be reached 24x7. Moreover, there are various points where the consumer interfaces with the brand—whether online or offline. Thus our franchisees, who are spread all over India, take up the job of calling up buyers at all the essential steps of the purchase process—including after-sales.

"Our team at Noida updates and consolidates our buyer database, including demographic profiles and preferences, with inputs from the franchisees. We have only assigned to an external agency the sorting work of our database acquired through various channels. But that's barely 10 per cent of our entire CRM function.

"Of course, an in-house setup does require the right infrastructure, back-end operations, etc. to be effective. And as to whether or not it is economically viable, we cannot state precise figures. The effectiveness can be gauged through repurchases, recommendations buyers give to others, and so on."

As told to Renuka Rane (renuka_rane@thinkdigit.com)



Bhavin Chandarana
Founder and
managing director
Indialinks Web Hosting
Pvt Ltd

We set up our online payment gateway primarily for our overseas customers, but of late, the Indian market has started adapting to this new method of payment. Today, about 25 per cent of our Indian clients use the online mode of payment.

Our gateway providers are Worldpay, ICICI and CCAvenue. With ICICI, the entire process is electronic, right up to the bank account credit stage, while the other gateway providers give us cheques after a week, or in some cases four weeks, since they hold back money as a security.

Our experience with our providers has been satisfactory—charge-backs (cancellations of purchases) have occurred only in about 2 per cent of all transactions. We have a verification process, especially for new clients, before we process orders.

I'd say the trend of using online payment gateways is on the rise.



ONLINE PAYMENTS:

What are the advantages associated with employing an online payment gateway? What about charges, charge-backs, fraud, and the Indian reaction? We asked five business heads about their needs and experiences. Here are their responses



Farid Khan
Chairman and CEO
IntelCorp Software (I)
Pvt Ltd

We provide a variety of e-commerce solutions, and our clientele is entirely outside of the country. Payment gateways have been the means for all our client transactions right since 1999.

We worked with Canada-based PaySystems for a long time, but have now moved to an Indian provider. There was concern as to how our customers would react on seeing a conversion to INR, but there seems to be increased acceptability.

By and large, our experience with the payment gateway method has been very good. Our transactions have brought us over \$200,000 (Rs 90 lakh) a month in turnover for a site that was selling phone cards in the Caribbean, and up to Rs 12 crore per year for our other e-commerce sites.

A major disadvantage is the extreme retail orientation that card companies such as Visa, MasterCard or American Express have. If a customer disowns a transaction, the entire onus of proving fraud is on the merchant. I have had charge-backs, and in some cases the goods have not been returned. There is no recourse to legal redress because the customer is offshore.

These are, however, stray cases. And such experiences have comprised perhaps 2 per cent of all our transactions.

The Indian customer has still not adapted to the online method of payment. Even when I personally purchase something from an e-commerce site, I still prefer the Cash on Delivery (COD) option! But I believe the card payment mode will pick up.



Senthil T
Managing partner
www.shopsilkonline.com

We are primarily silk merchants. We do very little advertising, but still clock a few online sales every month. We decided to explore the online payment avenue with our Web site.

Installing the gateway cost us Rs 25,000, and we incur a commission on every sale. This is as an investment towards our customers' convenience. Until it becomes commercially viable, I guess we have to take solace in the brand value it adds to our site.

Also, we expect an increase in sales from abroad. The risk of loss due to charge-backs comes upon us, but thus far, no untoward incidents have taken place.

THE WAY TO GO?



Sunny Shah
Founder
www.variousdeals.com

The nature of our business involves monthly payments. Some among the 350-odd subscribers we have for our service, providing tips on the securities market, demanded the ease of card payments. Also, I was thinking of expanding my customer base beyond Vadodara to the rest of the country. A Web site was the obvious solution, and payment gateways seemed the most convenient mode of payment.

The initial charges came to Rs 8,000. Bank debit cards are charged a 7 per cent commission, while credit cards are charged at 4 per cent. We have not yet encountered fraud or negative experiences of any kind.



Kailash Katkar
CEO
Cat Computer Services

We set up a payment gateway seven years ago through a company called Digital River, primarily for the benefit of our customers abroad. Back then, costs were quite high—about 22 per cent of the transaction value. Later on, we moved to Element 5, a Germany-based secure server, and costs came down to less than 10 per cent.

Although 80 per cent of our anti-virus solutions business comes from India, we never considered the option of an online gateway for this market because our customers didn't really need it. But since we have now tied up with Microsoft, who require their associates to be payment gateway enabled, we've started an online payment option.

I had a tough time trying to install a gateway from one of the bigger players such as ICICI, HDFC and Citibank, so we had to go with CCAvenue. We are satisfied with their service.

I don't see much risk associated with this mode of payment—the entire process is transparent, and the statements provided are accurate.

As told to Philip

eMpowered by

What sets apart a proficient computer system integrator from his peers is the quality of service he can offer - optimising client requirements with technology trends and the latest market offerings. Often, awareness of the market and knowledge about unique and cutting edge products can make that vital difference for a young aspirant to rise from a small time assembler to an IT-support professional in an MNC or a reputed organisation.

Digit's eMpower programme, in partnership with Seagate, Intel and Airtel, is an initiative to upgrade technology knowledge and skills of students at various networking and hardware training institutes across the country. By this initiative, *Digit* gives the students an overview of the contemporary IT industry and the lucrative jobs it offers. Of the 4 million PC units shipped in 2004-05 (up by a million from 2003-04), the share of the MNC and branded segments has gone up by 10 and 3 per cent respectively. Jobs in this sector are set to increase threefold by 2008, with entry-level salaries varying from Rs.5,000 to Rs 25,000 per month depending on the employer - MNC, organised or unorganised sector. What is also significant is that some of the current students would also potentially be purveyors of technology products by joining the channel segment as a Reseller, VAR (Value Added Reseller) or even a Network Integrator.

At eMpower, Seagate, the largest hard disk player with almost 80 per cent of the Indian market shares a presentation on contemporary storage technologies and its hard disk. It also gives an opportunity to register for a half-day's training session on hard

“Digit's eMpower programme is most informative and geared towards making our students better professionals of the future

Sandip Katna
Manager - quality control
Jetking Infotrain Ltd



“Such presentations should keep on happening, this help us knowing the market and industry well.”

Anju Deswal
F-tec Hudson lane, Delhi



disk handling which will be certified by Seagate.

Intel at this programme explains the processor and the chipset universe. While efforts are made to explain the different mix-and-match optimisation possibilities, other topics include evolution of the processor - from single-core and single-core with HyperThreading to dual-core. Future trends in this area are also covered by Intel.

Airtel introduces students to the concepts of Asymmetric Digital Subscriber Line (ADSL) broadband. Which, lately, is turning out to be the most popular means for homes to connect to the Internet; tomorrow's networking professionals are updated on this technology as well. Over 3,000 students across the country from Jetking, IIHT and F-Tec have benefited from this initiative. The programme is so popular that students always ask for more - more industry partners, more information and more courseware. "Please increase the time span," says Vijay Savla of Mumbai, while Ashish Singh adds, "Sun and Cisco should also participate." The programme continues to reach out to more training centres, empowering tomorrow's IT professionals.



“The information provided by Seagate and Intel is very useful. More such programs should be held

Ram Shanker Jaiswal
IIHT - Pusa Road, Delhi

Seagate

Seagate, was the first company to build 5.25-inch hard disk drives for the PC. While it may have seemed a minor milestone at the time, this hard disk drive introduction is today regarded as the one single event that helped fuel the PC revolution. Throughout its history, Seagate has successfully relied on a strategy of ownership and vertical integration of key underlying technologies: designing, developing and producing the components that underpin its storage products, rather than relying solely on outside suppliers.



Intel

Intel introduced the world's first microprocessor in 1971. Co-founded by Gordon Moore, who famously predicted the doubling of the number of transistors on a chip every 18 months, today, Intel, the world's largest chipmaker, is also a leading manufacturer of networking, and communications products. Multi-core processing, wireless access, broadband reach to the farthest corners of the world, and digital entertainment are the focus of their technologies today.



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for the Seagate Certified Engineer



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148 Civilization IV



154 Five Months To A Million



168 "No eLay," says Electra

Digital Leisure

Technology Beyond Work

Lead Feature

Trust No One!

That's the motto being promoted by security software companies across the globe. But is such paranoia really warranted?

Agent 001

It was a bright, but cold, winter morning. As is customary, I awoke, switched on my monitor (my PC is always on), put the tea-kettle on the fire, and sat down to check e-mail. This has been my morning ritual for as long as I can remember, and takes precedence over age-old rituals such as wishing my family Good Morning. Yes, I am a geek, and proud of it!

This particular morning, I started up Opera, which has my Gmail account configured in its inbuilt e-mail client, and clicked Check/Send. "Fetching messages 1/47" it said, so I sighed and went

back to the kitchen to nurture my feeble tea-making skills. About 10 minutes later I returned to see the dreaded error message from Avast! Antivirus, proclaiming, "A virus was found!" Panic set in; I rushed to my PC, half-spilling my tea along the way, and promptly clicked the Delete option in the pop-up. "Ahh, problem solved," I rejoiced, after Avast! gave me the all clear sign.

It was only an hour later that I realised how foolish I had just been—when I accidentally stepped on a sticky tea stain on the floor. This got me thinking:

"Why are we so paranoid about security?"

Yes, I realise that this sounds like a silly question to the overwhelming majority of the computing world, but I found myself asking this question anyway. So I got a virus, and that too, one that my anti-virus detected; what's the big deal? It's not like the virus, whatever it was, could have done any harm once Avast! had detected it. It was in an e-mail anyway, in Opera, so it's not like I tried to exe-



cute a file or anything like that. Still, I'd been so panicky! To top it all, this is my home computer—not the office computer where I store all my important work data!

Several days of discussions and debates with colleagues and friends got me believing that I'm insane... the majority of my friends and colleagues found nothing wrong with my reaction—spilt tea and all! Others just felt that I'd overreacted a “tad,” and were OK with me panicking, but chided me about my carelessness in stepping on spilt tea!

Six lectures about why I shouldn't fill my tea cup to the brim, and two homemade recipes for stain removal later, I was appalled to find that I was the only one who could see the pointlessness of all this paranoia.

At the risk of starting World War III, I have now started to believe that all these fears we have about computer security have been infused into our collective psyche by clever security software marketing, rumour-mongers, and because of sheer ignorance!

A Bold Statement?

Yes, it is, but I have reasons to believe so. No, I am *not* another “Big Brother is watching” delusional psychopath. Actually, I just couldn't care less for Big Brother's antics, or those of the rest of the family!

I am not saying that spyware, adware and viruses are encouraged by security software developers, but isn't it just a little too convenient that security firms benefit from all the paranoia raging across the world, with more people buying their products—even for home systems which don't need such high levels of protection? Thank God for the free software movement, which makes sure those informed enough can always find freeware tools to take care of basic PC security at home.

“What possible use could anyone make of the data stored on my home computer?”, I asked myself. I am still waiting for an answer that justifies my erstwhile paranoia. The only possible way my computer could be at risk is if it were controlled by a hacker to launch DDoS (Distributed Denial of Service) attacks, or used to spam a million people; and I think I'd notice if that started happening—courtesy my bandwidth monitor, anti-virus, anti-spam, anti-spyware, and various other “anti-” tools.

Right about now, scores of people are yelling “Hypocrite!” and waving their clenched fists at me. How can I have all this installed and still say that I am not paranoid about security anymore? Well, it's my *state of mind* I have changed, not my *computer or software preferences*. I am no extremist, and am not about to start uninstalling every software that begins with the word “anti-”. I'd still rather not be attacked by malware, but if I am, I'm not going to consider it the onset of Doomsday!

The Psyche

There's just one question all of us need to ask ourselves, “What's so important on our home computers that we're terrified of malicious code?” Office computers, or computers in a SoHo setup, need to have increased security. This is understandable. However, do regular home computers, those we use just to check e-mail, play games, surf, watch movies, etc., really need government-level security?

Exaggeration? Perhaps! But surely there are enough of us who would like the RBI's security system for our home computers, right?

The problem lies in the fact that we're terrified of losing data, having to format, or face the invasion of our privacy by spyware. And this fear, I aver, has been instilled in us by trends in the security software industry, the media, as well as a lot of hearsay and sensationalism of security breaches.

Isn't it weird that “a friend of a friend” has always had a nightmare virus hit them, one that formatted their entire hard disk and loaded Linux on it? Or how about that story of the virus that ruined someone's *hardware*, causing things like graphics cards and CD-ROMs to never work again? You will even find people who swear that a friend's mobile phone was rendered useless by a virus which sent lewd SMSes to all people in the contact list, then displayed a laughing skull and shut the phone down for good! Perhaps you'll like the one about another “friend-of-a-friend” who lost control of his/her computer to a hacker, and even pulling the power plug didn't relinquish command back to the user! If you haven't met such people, or heard similar stories,

either all your friends are super techie, or you live high up somewhere in the Himalayas!

“Balderdash, drivell and baloney, flavoured with hogwash!” is my reaction to such stories, but unfortunately, there are people among us who swallow such servings with relish and pass them on with a dash of exaggerated side-dishes. Sadly, this is just because we don't know any better, and are still perplexed by a PC's complexities.

Life After Data

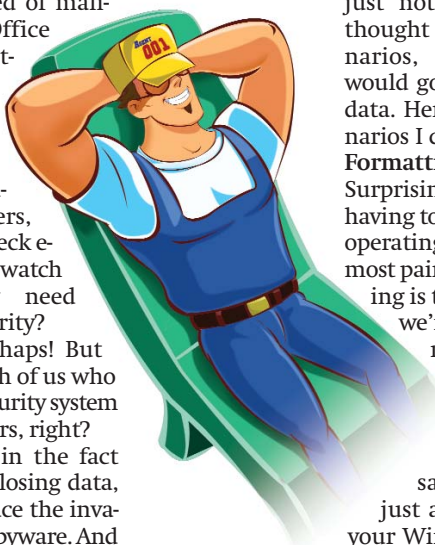
What's the worst that could happen? This is the question that made me realise that adding all that stress and worry into my life, about my computer at home, was just not worth it. I sat down, thought out all the possible scenarios, and realised that life would go on, with or without my data. Here are the worst-case scenarios I came up with:

Formatting and reinstalling: Surprisingly, it is this irritation of having to unload and load a whole operating system that seemed the most painful. What's more surprising is that as employees of Digit,

we're used to formatting and reinstalling on a regular basis—the Test Centre guys do it as many as 10 times a day! So why was I so scared of doing the same thing at home? It's just a question of popping in your Windows boot disk, formatting your C: drive (or whatever is your Windows drive) and following a few silly commands—twenty minutes tops!

Data loss: Sure, there's always the risk of losing data, especially from your Windows drive. But why would you store anything on that drive? I know I don't. I make sure all my data is on a different partition, so the only thing I lose is time, which is spent on reinstalling my programs.

Reinstalling programs: This can be very painful, but thanks to Windows XP's System Restore, or third-party utilities such as Norton Ghost, life can be a lot easier. All you need to do is select a point to restore Windows to, or if you use a utility such as Norton Ghost, create a backup image, save it on another partition and then load it as and when you want to get a perfectly clean system. The trick is to format the computer, load all the essential software that you use regularly, and then make a backup image!



Spyware: This is a sensitive issue, and people have different views about spyware. It's the same reason why many of us use Google's Gmail service, while others still refuse to because Google claims to have a robot read your mails and display relevant advertisements. Honestly, I don't care if a machine reads even my most intimate e-mails, but many do. It's just a matter of choice really. So as long as you don't store passwords and credit card information on your computer, or within your browser, you have nothing to worry about.

Hackers: Yes, many of us are paranoid about being hacked. The fact is, unless you work for an atomic power plant, are an aide to the Prime Minister, or have a T3 line at home, 99.9999999999999999 per cent of hackers couldn't be interested in your home computer that connects to the Net via dial-up or even a 'broad-(hah!)-band' connection! If someone actually tried to hack you, it would only be to test his or her skills and then move on. Why? Well, I hate to be the one to break it to you... but you just aren't important enough! No one wants to hack your computer and look at pictures of the family dog, your trip to Mussoorie, or your baby photographs! Hackers have a purpose, they want money, information, control, or access to another more secure computer on your network. The majority of home computers in India offer none of these: you don't store credit card information on your PCs (hopefully), you have no information of global importance, your connection speed (or lack thereof) makes your computer useless for participation in DDoS attacks, and it's not like you're on the same network as the RBI or the US Department of Defense!

Online Cons

These happen! Unfortunately, this rarely has anything to do with anyone's computer; instead, it's more to do with the person controlling the mouse and keyboard! Alas, it's stupidity that most online con-artists prey upon, and not weak passwords or hacked computers!

Most of us laugh at some of the e-mails we receive, supposedly from Nigerian princes or Saudi oil barons, claiming that if you let them deposit millions of dollars in your account they'll tip you with a few thousand. Sure, 99 per cent of

us just hit [Delete], but that one-in-every-hundredth person makes the con-artists' efforts worthwhile!

There was a story in leading newspapers, early in January 2006, about an Indian girl who gave out her Internet banking password to a prospective groom. The picture in her head was of a young, handsome, jet-setting executive who traversed the globe; the reality was a 50+ man who successfully conned her out of over Rs 2 lakh! Love, especially the online kind, ladies and gentlemen, can be a very sharp double-edged sword. Though most of us tch-tched at the story, you never can tell what you would have done in the same situation!

Advice

I am told that I have to offer some form of advice or another if I want this little rant to ever get published. So here it is, my four cents worth on how you can prevent lapses in security:

- ❑ Don't ever store credit card information on your computer
- ❑ Storing passwords in your browser is a no-no, and you should remember to clean your browser cache regularly
- ❑ Make sure you store everything that's important to you on a drive that's different from the one that the OS is loaded on, and always set all your "anti-" software to update automatically!
- ❑ Never—and I mean Never—trust anyone! Especially someone you have only met online. Never part with credit card details and Internet banking passwords—especially with your shop-till-you-drop better-halves!

But all this sounds like I am feeding your already overactive imagination, making you even more paranoid than before. In truth, I am just stating the obvious, because some of us tend to forget even that. Personally, I feel it's more important to heed the advice that follows:

1. Never take things too seriously! Spyware on your system does not mean that all your deepest darkest secrets are now part of the public domain. It probably just explains why your browser navigates to some silly site, and nothing more.
2. Try not to hyperventilate every time you see a message on your system that contains the word "virus". What is the point of such panic after all? If your anti-virus found some malicious code, it obvi-

Being paranoid about spyware, adware and Trojans is like thinking that the entire world of hackers is out to get you

ously cannot harm you. If the anti-virus let a virus slip by undetected, you won't know until it's too late anyway. So in actuality, there's nothing any of us can do to stop our PCs from attempted infection, or even infection itself.

3. Realise that you and your home computer are really just motes in a desert of computers, so being paranoid about spyware, adware and Trojans is like thinking that the entire world of hackers is out to get you. This is perhaps a little too narcissistic, isn't it?

4. Try not to drop tea on the ground. If you do, clean it up immediately—it really can leave a terrible stain if it's not cleaned up for a while!

Moving On

This experience of mine has been akin to seeing the fabled light. I now waste less time looking through what services and threads are running on my computer, and more time enjoying myself actually using what I have. I have begun trying out more software, visiting more sites that ask me to install ActiveX components and running a lot less spyware checks, ever since I saw the futility of being paranoid. Overall, my computing experience has become a lot more fun!

Perhaps I will start a support group—PTA: Paranoid Techies Anonymous—where people can stand up and say, “Hi, I’m Jon, and it’s been 4 days since I last ran SpyBot S & D and AdAware!”, and hand out cookies to those who share their secret methods of staying paranoia-free.

I've also formatted my C: drive once, just for the heck of it, and found, intrestingly, that despite the fact that I was paranoid about security and an obsessive-compulsive tweaker, Windows XP still runs the fastest just after a clean format-and-reinstall!

Big brothers, mothers, fathers, sisters and hackers alike listen up, "Heres one computer user who can stay smart, secure and unworried. After all, I am armed with weapons of my own: a Windows XP boot disk, a DVD of all my favourite freeware and an 80 GB external hard disk that has all my important data, movies and music! So give it your best shot, the worst thing that could happen is that I format my PC and get a faster computer as a result!" ☒

agent001@thinkdigit.com

Google Alert!

1 According to industry analysts, when did sales of digital cameras surpass sales of film cameras?



- a) In January 2006
- b) Around June 2005
- c) Around January 2004
- d) In 2001

2 What can MSN Virtual Earth do that Google Earth can't?

- a) It shows defence establishments in even greater detail
- b) It can pinpoint your location using Wi-Fi
- c) It shows the current cloud cover over a region
- d) It can tell you where Osama is

3 Why is a virus called a virus?

- a) Because it can replicate just like biological viruses
- b) Because it "infects" computers
- c) "Virus" is derived from "viroso," which means "harmful" in Italian
- d) It stands for "Virtually Ruins Ur System"

4 According to a recent CNN.com poll, what was the most significant development in the history of the WWW?

- a) Webcams and photo sharing
- b) Skype

c) Hotmail d) Google

5 What is the "Deep Web"?

- a) Adult and gambling sites
- b) Sites not indexed by regular search engines
- c) The set of Web pages with a black background
- d) Hyperlinks that can only be reached after traversing hundreds of them

6 What is Quaero?

- a) The new name of Cairo
- b) A new optoelectronic chipset being developed by Intel
- c) An advanced search engine being designed in Europe
- d) The Latin word for "computer"

7 A site called ThePlaceForItAll is selling tablet Macs. What is the hard disk size and RAM?

- a) 120 GB, 128 MB c) 80 GB, 512 MB
- b) 172 GB, 128 MB d) 40 GB, 512 MB

8 What's been the complaint about the recently launched Intel-based Macs?

- a) They crash even more often than Windows 98 did
- b) They are astronomically priced at \$6,200 (Rs 2,80,000)
- c) There have been no complaints: in fact, they're faster than their predecessors
- d) They ship with no software

9 Microsoft's Xbox 360 has most recently been in the news for...

- a) Contemplating using Blu-ray
- b) Refusing to use Blu-ray drives
- c) MS having been sued for not controlling adult content
- d) MS having been sued for incorporating parental controls

10 What has nanotechnology *not* produced?

- a) A guitar on the scale of 1 micron
- b) A cure for smelly socks
- c) Metal rubber
- d) A cure for bad breath

A "nibble" is the term, now hardly used, for four bits, or half a byte.

Quantum computers will work on the principle of branching out into many universes, with one computation being carried out in each universe.

Did You Know?

Got an interesting question? Send it in with the answer to tq@thinkdigit.com Mark "TQ" in the subject area.

Answers

1. c) January 2004	7. d) 40 GB, 512 MB
2. b) Wi-Fi locating	8. c) No complaints
3. a) It can replicate	9. a) and b) are both true
4. d) Google	10. d) A cure for bad breath
5. d) Sites not indexed	
6. c) A search engine	

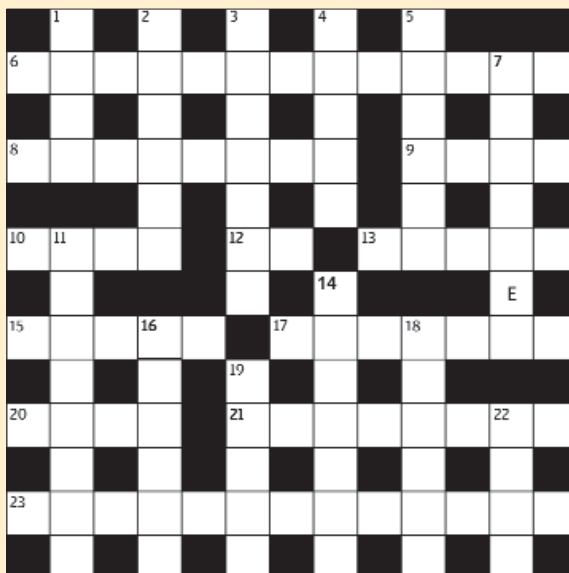
Crossword

ACROSS

- 6. Price scanner(7,6)
- 8. WinNuke (4,4)
- 9. International Data Encryption Algorithm(abbr)(4)
- 10. Telephone tapping machines(4)
- 12. Short for decibel(2)
- 13. Software programme that performs a service(5)
- 15. Adaptive Differential Pulse-Code Modulation(abbr)(5)
- 17. Microsoft's multimedia encyclopedia(7)
- 20. Short for Any Transport over MPLS(4)
- 21. Sample shareware or HTML Assistant Pro?(8)
- 23. Known as 'tunneling' in networking(13)

DOWN

- 1. E---- sending messages on the net(4)
- 2. ----code or password(6)
- 3. Google text based advertising system(7)
- 4. Short for broadband(abbr)(5)
- 5. Sending message over a facsimile machine(6)
- 7. Wireless telephony continuously connected to the web(7)
- 11. Changing of data to present day and time(8)
- 14. Put a programme onto a computer system(7)
- 16. Common Random Access Memory(abbr)(6)
- 18. Unit of electrical power(6)



- 19. Category of objects(5)
- 22. System base(4)

Send in your answers to the crossword with your complete contact details to TQ@thinkdigit.com on or before February 15. One lucky participant will win **Machine Nature**

By Moshe Sipper
Published by Tata McGraw-Hill



Win!

January 2006 Solution



Sumit Ghosh of Gujarat wins the prize for the January 2006 crossword

Crossword by Nitta Jaggi

Conflict Global Storm

Let's face it—tactical first person shooters are a dime a dozen. In fact, they're a dime a thousand, with each new game more stereotyped than the one before it. Ergo, there's a very good reason that only a few of them are ever really successful. And *C:GS* does *not* come under that category.

The idea is good enough (even if it's a tad unoriginal): you're put in charge of a tactical squad of four called Red Team, which consists of Sergeant Bradley, Corporal Jones, Corporal Connors, Corporal Foley, and later, Corporal Sherman as well. Naturally, you're sent into a number of hostile locations throughout the game—ranging from Russia to Kashmir! The idea is straightforward—complete the mission by any means necessary and get the hell outta there! Simple enough—or so you'd think.

Unfortunately, the game is marred by a number of basic errors that ruin its playability. Take the AI for example. The user's manual proudly claims that AI has been significantly improved since the last installment, which makes you wonder if anyone but the worst novice had trouble completing it. The fact is that the AI is *extremely* dumb! Apparently, running straight into you from all directions is the only way your opponents know how to kill. Sure, there is the odd exception, but that doesn't matter because it upsets your "sit in a corner—aim—shoot" tactic only for a little while.

And it's not like your team is any better. They might be corporals, but they're dumb enough to be toilet cleaning privates. Their aim is worse than that of my arthritic grandma, and they waste bullets like they come for free. This is ironic really, because the bullets *do* appear to come for free! The amount of ammunition available throughout the level is so unreal, it's not funny! Each squad member seems to be able to carry a pistol, a knife, an assault rifle, medkits, grenades of multiple varieties, and hundreds of rounds of ammo for each weapon. What are they feeding these guys?

Speaking of medkits, the unbelievable health system in this game will have you *ROTFL*. Would you believe the best tactic for healing yourself is to let yourself die? Yup, some genius at Pivotal Games decided that a medkit should fully restore your health, no matter when you use it. And the icing on the cake—even if you die, the mission fails only if each and every squad member dies!

So the most effective way of using medkits is to wait till a member dies, then go revive him with a medkit, and voila—he's back to full health! It makes you wonder: are the guys at Pivotal retarded, or do they think we are retarded?

It's not all gloom and doom though. What the AI lacks in intelligence, it makes up for in numbers. So you'll always be kept on your toes when under attack.

There's also the occasional battle that will actually be difficult and might even require multiple tries before you succeed. The graphics are good, too, with lots of nice touches like bullet holes in walls and even

butterflies flying around! The squad control is not really intuitive or in-depth, but good enough for the game.

At the end of the day, *C:GS* could have been a good game, but some basic flaws make it an average game at best. It's certainly good entertainment and quite often a laugh riot, but for all the wrong reasons. The bottomline—it's a good way to kill time, but not worth it if you want to play a real game. Five on 10! ☒

Abhijeet Ahluwalia
Developer: Firaxis

Developer: Pivotal Games

Publisher: NovaLogic

Distributor: Milestone Interactive
Software Ltd

Website: www.milestoneinteractive.com

System Configuration: PlayStation 2

Price: Rs 2,999

Contact: 022-28203319





SID MEIER'S CIVILIZATION IV

"It's turn-based? How does a turn-based strategy game get billed as one of the greatest games of all time? What is this world coming to?" I bellowed, scepticism oozing out of every pore. By the time I was old enough to know what the *Civilization* series was all about, I felt a marked disinclination to try it out. Curiosity, however, still kills cats everywhere.

In The End, There Can Be Only One

Sid Meier's *Civilization IV* (Civ 4), like all *Civilizations* before it, is all about building your empire by making it grow, and by conquering

other empires. Sounds like them all? It's not that simple. To keep your city growing, you need to keep your people happy—a few beefy guards to keep them safe, a regular supply of food, and some culture to keep the city's borders growing, and your people won't rebel against you.

You start out as the leader of a civilisation—from Napoleon leading the French or Roosevelt leading the Americans to Julius Caesar leading the Romans, or even Gandhi leading the Indians. It's really fun when your people talk back to you (sometimes curtly, too) in Hindi.

Everybody starts out in the prehistory of man, and your

civilisations develop and evolve. Through your explorations of the world, you encounter other rulers who you can decide to be friends or enemies with, open up trade routes, and throw a friendly insult at every once in a while. You eventually reach futuristic times, with the capability to nuke each other left, right and centre.

And now for the part I dreaded the most—you have to play in turns. So you issue a command to each of your units in your turn, and wait for other civilisations to make their moves. If you haven't played turn-based strategies before, this can be more than a little frustrating, but after a while, it's not so bad.





The Grand Tour

Visually, *Civ 4* is quite impressive. While due attention has been paid to details such as waves, flowing water and swaying trees, these aren't as performance-hungry as one would fear. The interface is well laid out, and didn't pose too much of a task to understand.

The sound is an impressive part of the game. The background score is full of African and Gregorian chants, and fall gently upon one's ears. The music changes according to what level you are zoomed into in your map—at full zoom, you hear civilisation-specific music for your cities (yes, sitars for India), and as you zoom out, the music changes to

the Gregorian chants again.

What didn't go down too well with this reviewer was the fact that while inconsequential alerts keep popping up right in front of you, the ones that really matter—like when your opponent kills your favourite archers—are put in the top-left corner of the screen, where you aren't really likely to be paying much attention.

Submission

All right, so I started this game with pessimism, and I've been proven wrong. The gameplay is extremely addictive. The battles of wits with opponents are engaging, the humour is cheeky, it looks good, it sounds good, and it makes

you wonder why you missed out on the previous games. A cry of joy and a nine on ten for this game!

For newcomers to the world of turn-based strategy, it's a tad annoying at first, but everything else compensates for that. It's also a game that takes a *really* long time—getting through 6,000 years of the world's civilisations does take a while—so please make sure you pause to have your meals. We don't want you starving to death at your desktops.

nimish_chandiramani@thinkdigit.com

Publisher: 2K Games
Minimum System Configuration: 1 GHz CPU,
256 MB RAM, 32 MB video card with
hardware transform and lighting capabilities



BROTHERS IN ARMS EARNED IN BLOOD

Every so often, one wishes that one could palm off a game review to someone else. I've always maintained that the WWII theme has been grossly overdone—from strategy to shooters to god-knows-what. *Brothers in Arms: Earned in Blood* (EiB) is a mix of both—you need strategy and tactics to finish your enemy, as well as some of that “blowing holes in people” thing that we all love so much.

‘F’ Words

In EiB, you follow the (real-life) experiences of Sgt Joe “Red” Hartsock, as he and his squad made their way around France, dodging “those blasted Krauts” and their Panzers. There is no real story, actually—you just live through all their missions, while Red describes them to a Colonel S.L.A. Marshal in a post D-Day interview.

You clearly aren't Rambo. If Red's slightly wimpy-looking character doesn't give that away, then the fact that frontal assaults often result in death will. You need to follow the four ‘F's to get rid of your enemy—Find, Fix, Flank, Finish! To fix your enemy, you need to lay bullets on them thick—this will suppress them, and you can see this in the handy suppression indicator over their heads. Suppressed enemies fight back less, and are less accurate when they do. And now comes the strategy part—you need to figure out a way to get around them and hit them from the side. The “Situational Awareness Mode,” which gives you an aerial view of your location, lets you survey the scene around you, check out points with good cover, and decide on your attack strategy. Switching between shooter and situational awareness is seamless and quite impressive.

Gather Round, Children

The game has ten chapters, each of which is humanly possible to clear. Cutscenes fill the gap with some good

voice-acting, but you can't skip them if you just want to get straight to the action.

Once done with the chapters, turn to the skirmish mode—especially the ‘Timed Assault’, which has you eliminating as many enemies as possible in a given amount of time. Or try your hand at the back-breakingly tough “Tour of Duty”—five missions to complete without dying. You can go through skirmish missions as a German, too!

“Dammit Red, Get DOWN!”

EiB is not just about you. You have a squad to lead, and they will play an important role in your victory. Commandeering a team sounds dicey in anything but a strategy game, but this is alarmingly easy in EiB—a right-click here, a [Shift] there; big plus points to Gearbox for this. You usually get one Assault squad, and every so often, a Fire squad. And sometimes, that Fire squad is a tank. There's probably a ‘propah’ protocol for what squad to use for what purpose, but since they're both good at facilitating general mayhem, it doesn't really matter. Your team is smart enough to protect itself well in sticky situations, so you don't need to baby-sit them all the time. They also warn you of danger when you start taking bullets; this gets a tad repetitive.

“Let's get those %(*@#\$\$%s!”

Battlefields are good and busy in this game. While you shouldn't expect incessant, gut-wrenching battle all the time, it's still fun enough. Your enemies don't just shoot at you from their positions; while you sit and figure out your attack plan, they keep coming closer and flanking you—to pressure you into doing something stupid like standing up and blasting away with your gun, only to be quickly dispensed with.



Through these fields of destruction...



Baptisms of fire

It's often happened in shooters that you'd end up killing wayward team-mates if they ended up in your way during a battle. To ensure the safety of your buddies, EIB forbids this—point at them and shoot, and all you get is a click and a big “Not Allowed” symbol.

An annoying thing about being in battle is that the guns are awfully inaccurate. You're supposed to look down the barrel of the gun to get better aim, but all you end up getting is a close-up of your gun—you can barely see the guy you want to shoot!

Another gripe is that when you've emptied all your bullets, you need to release the mouse button and click it again to reload. Many a time, you don't even realise that your clip's empty till you try to shoot someone and find yourself going through the motions of reloading your weapon. The result?

Self: Assault! Blaaaa! We're gonna kill you al...[click!] Darn!

German: [Miscellaneous German Sounds!] [Bang!] Haha!

Self: Uhhh...

Tour de France

The game has you playing in smallish parts of French towns and the countryside. Everything is quite well-detailed, but the maps are too restrictive. It's surprising how you aren't allowed to jump over walls that are barely waist-height, or even walk through bushes! We're still hoping for a WWII shooter that allows for some more freedom.

The graphics in the game aren't too great—at least, not comparable to most shooters today. Nevertheless, some really well-done texturing ensures that it's still quite pleasing to the eye. And really, it doesn't matter—the gameplay more than makes up for any shortcoming in the graphics. Environmental sounds are what you would expect them to be—you can hear random gunfire in the background, bullets whizzing past you and thudding into the ground, and the occasional anti-aircraft battery. The guns sound incredible, even on a regular 2.1 speaker system. The US BAR sub-machine gun has a brilliant bass thump, as does the German MG 42 machine gun.

Fall In!

Brothers in Arms: Earned in Blood is a really good game—more so if you actually like WWII shooters. The AI is good, the sound is good, it looks pretty, has some intense action with choice amounts of gore, and is rife with some fun abuses you wouldn't want anyone below 17 hearing. Seven on ten for this one, because the many, many annoyances mar the whole experience. ■

nimish_chandiramani@thinkdigit.com

Publisher: Activision

Minimum System Configuration: Pentium IV 1.4 GHz or AMD

Athlon 1700+, 256 MB RAM, 64 MB DirectX 9.0c compatible card

Price: Rs 1,299

Distributed in India by World Wide CD ROMs

Tel: 022 - 56973894



As the battle raged higher



And though they did hurt me so bad, In the fear and alarm



I've witnessed your suffering...



You did not desert me, My Brothers in Arms...

The Korea Times, January 16, 2006

Police, Army Robots To Debut In Five Years

THE INCURABLE KOREAN desire to be at the forefront of technology is obvious again. How long before you thought Robocop would hit the streets? Twenty years? Ten? The Korea Times' Kim Tae-gyu tells us otherwise...

By the 2010s, Korea is expecting to see robots assisting police and the military, patrolling the neighborhoods and going on recon missions on the battlefield.

The Center for Intelligent Robots on Monday said the state-backed agency plans to check the feasibility of security robots by convening a 40-member planning committee late this week.

"If the robots prove to be viable technically and commercially, we will be able to begin developing them late next year," said Lee Ho-gil, head of the center.

When completed, the outdoor security robots will be able to make their night watch rounds and even chase criminals, according to Lee.

The government also seeks to build combat robots. They will take the shape of

a dog or a horse, with six or eight legs or wheels.

Toward that end, the Ministry of Information and Communication (MIC) and the Defense Ministry will combine to channel a total of 33.4 billion won (\$33.9 million) through 2011.

"The robots will be directed by a remote control system or move autonomously via their own artificial intelligence systems," MIC project manager Oh Sang-rok said.

"The two sophisticated robots will be empowered by the country's state-of-the-art mobile network, thus enabling mass production at an affordable price," Oh noted.

"In a nutshell, the mobile robot offers a hardware platform for the smart functions provided by the country's advanced network connected to the super computers," Oh said.

On top of their use in national defense and social security, the MIC hopes to use the network robots for the private sector late this year.

"Three kinds of households machines will commercially debut this October. They will sell for 1-2 million won, a price that will not scare off customers. The low price is possible since they are empowered by outside networks instead of incorporated software," Oh said.

The three sorts of wheeled robots will be used for various applications: cleaning rooms, health-care programs, Internet connection, home monitoring or reading books to kids.

The mechanical servants, some of which have the ability to re-charge automatically, can also order Chinese food and pizza by connecting to the local network.

The MIC already finished a test run of the household robots late last year by installing them in 64 households and two post offices in Seoul and its vicinity.

Hyung Tae-gun, director general at the MIC, expected the robots will sell up to 3,000 units for this year alone and the sales will surge in the near future.

"Recently Japan unveiled household service robots priced at up to 10 million won, almost 10 times as expensive as ours. So you can guess the competitiveness of our network robots," Hyung said.



Wired.com, December 19, 2005

Not With A Bang But A Whimper

THE IMPENDING PLUG-PULLING of Asheron's Call 2—the MMORPG—got Wired.com's Clive Thompson in a reflective and forlorn mood.

"Anybody out there?" I type, but I already know it's pointless. There's nobody anywhere near me. For almost an hour, I've been wandering around a desolate plain: Gray clouds scud slowly over rough quartz mountains, while a few birds wheel in the air near mushroom-shaped trees. I never see another living soul. It feels like the end of the world.



And in fact, it is. I'm inside Asheron's Call 2, an online game that is scheduled to die in two weeks. It never acquired enough players to make it self-sufficient, so the game's owner—Turbine—is going to do something that only happens rarely in the world of online play: On Dec. 30, it'll flip the power off on the remaining servers, and an entire world will blink out of existence.

This got me wondering: How do people behave in a world where the end is actually nigh? Sci-fi aficionados,

Cold War moviemakers and Christian apocalyptics have mused over this for years, since they've assumed that the end of life would have a catalytic effect on the human spirit. In nuclear-war or alien-invasion films like The Day After or War of the Worlds, catastrophic attacks turn America into a landscape of venal looting and family togetherness—our best impulses mixed with our worst.

But after talking to several longtime players of Asheron's Call 2, I've realized the end of a game world is less cataclysmic—and more subtle. The players aren't dying in real life; they're just being forced to disband. Their emotional state is thus more like the grief of an indigenous tribe that is being driven off its land by a megacorporation and is losing its way of life. It's kind of like the villagers at the end of Fiddler on the Roof, forced by the czar to abandon their homes and scatter to the four winds.

"It's really heart-wrenching. How will you connect with those people you spent every single day with? It's as though someone suddenly took away all e-mail," as one player who calls herself "Ellen Ripley" online told me. "Suddenly they seem nameless and ethereal, where once they were as real and important as our families, co-workers and Earth-realm friends."

Online worlds are, of course, more than just playlands for slaughtering ogres and collecting magic chain mail. They're social hangouts where players sit around shooting the breeze about their lives, their jobs, their favorite music. "That gives one an odd sense of home. And no one likes to see their homes be demolished," said Chris Thorn, a 26-year-old player in Arlington, Virginia.

The economy has also tanked. When the announcement first came down, players say, a majority of gamers immediately fled. Previously, you'd log on and find several hundred people online; now you'll get nine or 10. High-powered character accounts used to sell for as much as \$500, but the online auctions have gone silent. That's partly because, as the end nears, Turbine is tossing out some freebies and giving away more "rare" items, making them less rare. Without a sense of a future, capitalism ends. There's no demand in a condemned world.

Read the full article at www.wired.com/news/culture/games/0,69848-0.html

Read the full article at <http://snipurl.com/mediafeb1>

CNET News.com, January 17, 2006

Are Virtual Assets Taxable?

COULD YOU BE taxed for income you receive by selling things that don't exist? News.com's Daniel Terdiman ponders.

Journalist and "Ultima Online" junkie Julian Dibbell issued himself a very public challenge two years ago.

"On April 15, 2004, I will truthfully report to the IRS that my primary source of income is the sale of imaginary goods," Dibbell wrote on his blog at the time, "and that I earn more from it, on a monthly basis, than I have ever earned as a professional writer."

Essentially, he was telling the world he thought he could make a profit selling to other players in the real world the weapons, currency and other goods he had accumulated in the fantasy game "Ultima Online," and that he was willing to tell the IRS so. He ultimately came up short in his personal challenge, making more from his writing, in fact, than from his online trafficking.

Now, with a new article published in the latest issue of Legal Affairs magazine, Dibbell has the virtual-world community buzzing over a new question: Should online game players' assets—the weapons, characters, clothing and such—they've accumulated but not yet sold for real-world cash be taxable by the IRS?

"If you haven't missed hours battling an Arctic Ogre Lord near an Ice Dungeon or been equally profligate spending time reading the published works of the Internal Revenue Service," Dibbell's essay begins, "you probably haven't wondered whether the United States government will someday tax your virtual winnings from games played over the Internet. The real question is: Why hasn't it happened already?"

It's a question insiders at academic conferences like State of Play that study online games have been talking about for some time.

After all, since the trafficking of virtual goods from games like "World of Warcraft," "City of Heroes" and "Star Wars Galaxies" on exchanges like eBay sets their fair market value, the millions of online game players are collectively holding tens or even hundreds of millions of dollars' worth of these digital assets at any one time. And some would say that's a target the IRS can't ignore forever, raising the tricky question of whether virtual goods that are frequently bartered and exchanged in the gaming world can be deemed a taxable possession before they are sold for real-world money.

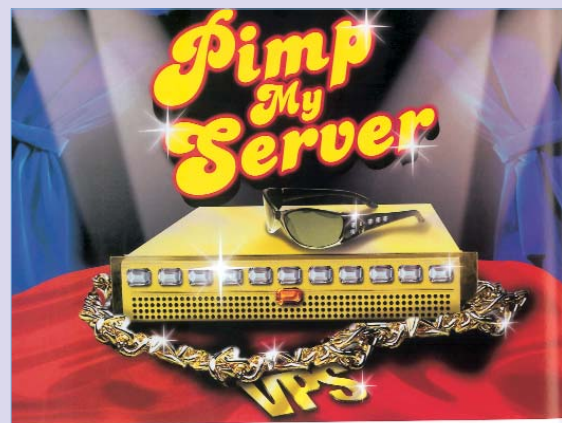
While most online game publishers try to sidestep the issue by saying in their terms of service that players don't control the property rights to their game assets, some say there's no theoretical reason the government shouldn't come calling for its fair share.

"From the standpoint of economic theory...there's no fundamental distinction between selling euros and buying magic wands," said Ted Castronova, an expert on virtual economies and an associate professor of telecommunications at the University of Indiana at Bloomington. "They carry value with them. If you're going to tax exchanges in the real world, you've got to tax exchanges in the virtual world, in economic theory."

The problem, said Castronova, is that it's not about economics.

"It's about common sense," he said. "Common sense says that when people are playing a game of Monopoly, you don't tax (the properties they buy and sell)."

For the complete column, visit <http://snipurl.com/mediafeb2>



Virtual Private Servers from WebFusion

The configurable, customisable step-up from shared hosting

Next generation hosting is here. VPS gives you complete control and root access to your own server environment. Each VPS performs like a stand-alone server. It can be rebooted independently and has its own users, IP addresses, memory, processes, files, applications, system libraries and configuration files. A crashed application in another client's VPS has no effect on your VPS. VPS gives all the flexibility of dedicated hosting with the same ease-of-use and low cost traditionally found with our shared web hosting. With prices starting as low as £2.99 a month, a WebFusion virtual private server is within everyone's reach.

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- Host up to 100 domains per VPS
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Who said server ads were boring?

We were pleasantly surprised to see WebFusion using a rather unorthodox method to promote their Virtual Private Servers. So don a little gaudy jewellery and say it with pride: "I'm a geek, yo!"

CINEMA 4D R9.5

"More power, more speed, more price." That was our goal. Here is the result.

New light sources and settings (e.g. Ambient Occlusion and Area Lights) make even more realistic images possible - all speeds of up to four times faster than with CINEMA 4D R8.5. So that you can take full advantage of this new level in image quality, CINEMA 4D can now output images in glorious 32 bits per channel colour depth. And there's an additional multi-pass link to the high-end compositing tool Shake.

CINEMA 4D is now even easier to use and more efficient. The new full-screen mode lets you move windows, and the new Context Browser gives you a complete overview of all your 3D files.

A particular highlight of the Advanced Render module is SKY. With just a few clicks of the mouse, SKY lets you create and animate realistic high-end atmospheric environments, including customizable 3D clouds.

Visit us online for more exciting details and to see what else is new in CINEMA 4D R9.5.

WWW.MAXON.NET

MAXON

Making your heart melt

We count on 3D software developers to come up with new and innovative ways to show off their software's capabilities, but this one still caught our eye. Who needs text when you can make puppy-dog eyes at your customer?

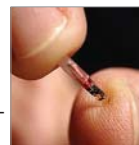
Learn iPodding!

The London departmental store Selfridges has come to the rescue of those unfortunate souls who can't figure out their iPods. For £65 (Rs 5,200), you get a 40-minute lesson on how to use the little device. And if you can't make it to the store, a teacher could even come to you!



RFID-ing the Dead

Implanting RFID chips in living humans has caused a lot of hoopla, but what about implanting them in dead people? VeriChip, which supplies hospitals with RFID chips to track patients, are also promoting the idea to track dead bodies—a better method than the classic toe-tags, they say.



Escape

NECESSITY MOTHERS INVENTION—AGAIN

Five Months To A Million

Warning: what you are about to read may well leave you with a low opinion of your own intelligence.

In what he claims was just twenty minutes, Alex

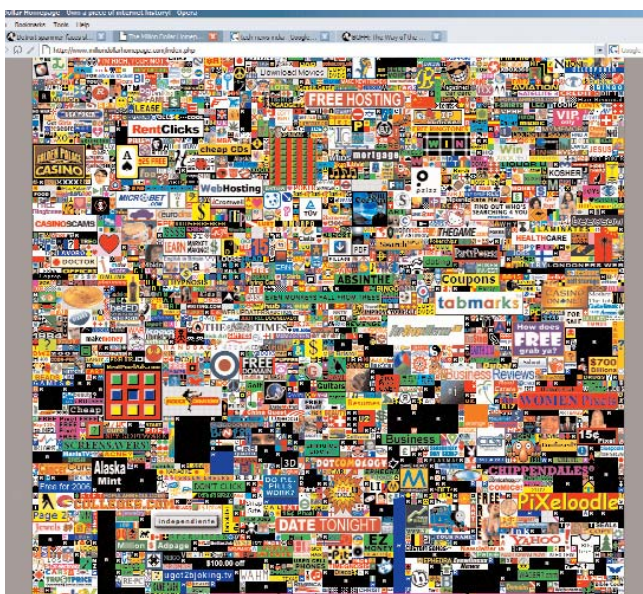
Tew, a student from Wiltshire, England, hit upon what is easily the most brilliant—yet somehow undiscovered—plan to get rich quick: make a Web page with a

million pixels, and sell each pixel at \$1 per pixel as ad-space. Oh, and what better URL than www.milliondollarhomepage.com? Apart from causing the general population to feel like a bunch of chumps, Alex now doesn't have to worry about his college education—the reason he cooked up this idea in the first place. The last thousand pixels were auctioned off on eBay for \$38,100 (Rs 17 lakh) on 11 January, totting up the earnings to a goodish bit above a million dollars.

Nobody is safe from jealous maniacs, and while we write this, the page is under a DDoS attack, and Mr. Tew has been asked for ransoms in excess of \$50,000 if he wants his site back up.

While we do appreciate the idea, we can't help but

cower in fear of the undoubted millions of lazy bums who are going to assault us with homepages littered with ads. Why the good Tew didn't turn to spamming and/or AdSense like the rest of the desperate youth is beyond us.



UNUSABLE!

McNoMoreUpdates

Many of us love McAfee. It's a name that spells trust and security. We were shocked, then, to notice a certain terrible turn of events.

So, you have a copy of McAfee Antivirus 8? It's a decent enough anti-virus; you can integrate McAfee Firewall, Anti-spam, and privacy protection into the SecurityCenter, just what the paranoid user needs. Ah, but what is an anti-virus without those periodic updates to keep you safe? Well, it's McAfee 8. Try updating your virus definitions and you are taken to a helpful site which tells you that updates for this product have been discontinued, and you need to *purchase* a new license! What do you do when your anti-virus provider decides they will give you continued protection only if you pay them more, especially when Norton offers updates for versions as old as 2001? Switch, of course!

Win!

My Desktop

Think you have the most beautiful, most innovative desktop around? E-mail us with subject **'My Desktop'** and your postal address to mydesktop@thinkdigit.com, and *Digit* will publish the most eye-catching of them each month.

Next month's winner will receive a copy of
Professional DCOM Application Development

By Jonathan Pinnock
Shari Lawrence Pfleeger
Published by Shroff Publishers & Distributors Pvt Ltd



The winner of this month is Swapnil More
E-mail: swapnil_6192004@yahoo.co.in



This month's winner is
Debangshu Sen
Burdwan
West Bengal

He wins
**Windows XP
in 10 Simple
Steps or Less**
by Wiley
Publishing Inc.



WIN!

Send in your entry and you could win an exciting gift just by sharing an amusing picture with a tech angle to it. The picture should be shot by you, and should not have been published anywhere earlier. E-mail your picture with the subject 'DigiPick' and your postal address **on or before 15th of this month** to digipick@thinkdigit.com. One prize-winning picture will be published each month.

DRUNKEN SURVEY

The Dire Consequences Of IT Stress

First it was our jobs, then it was our spouses, and now (as if we didn't expect this), it's IT. British charity Developing Patient Partners claims that IT problems—from crashing computers to irritating cell-phones—have become a popular modern excuse for turning to alcoholism. They carried out a survey of 1,000 people, a third of whom confirmed that IT hassles get them stressed out, causing many even to light up a trusty cigarette to escape all of it.

They have also noted, quite shocked, that 64 per cent of people think that stress is a disease (it's actually a *condition* that makes you vulnerable to diseases), and that one-third of people turn to alcohol in times of stress. In all the hoo-hah, we fail to find any mention of the exact number of people surveyed who had actually turned to alcohol in the

face of a BSOD. So, what is the survey trying to say?

We have all, of course, known for long that the PC can be the most frustrating thing since the Chinese finger-trap, but really, couldn't you just throw it out the window like regular people do?

GLOW-IN-THE-DARK SAVIOURS

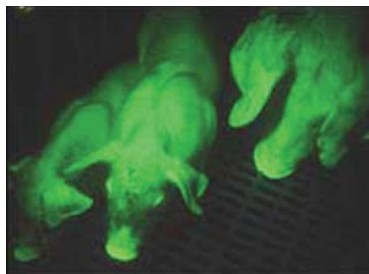
Fluoro-Piggies And The Good Of Humankind

Scientists in Taiwan claim that they have bred three pigs that—believe it or not—glow in the dark! By taking some genetic material from jellyfish, adding it to

around 265 pig embryos and implanting them in eight female pigs, they have found themselves with the lucky three who survived it all to become world-famous. Under blue light, the cute little tykes are said to glow as bright as a torch.

Taiwan isn't tomtomming about being the first to do this, though, because to our great surprise and amusement, they aren't! Yes, the glowing pig idea is quite an old one, but all that had been managed thus far was only a skin-deep glow. This new breed of pig is the first to be fluorescent inside out—even their internal organs glow in the dark.

Despite the undoubted entertainment one can derive from glowy farm animals, they have actually been bred for a very noble cause—stem-cell research and the analysis of human disease. Humans and pigs have a lot in common: notably, their hearts are similar. By using stem-cells from these pigs in humans, scientists will eliminate the need for complex surgical procedures to track the progress of these cells,



Yes, these are pigs!

People Who Changed Computing

Winamp Whizkid

With the slew of media players available today, it's easy to forget the Original MP3 Player that literally launched MP3—Winamp. Justin Frankel was just a



Justin Frankel

teenager when he was working on Winamp. He showed promise with computers as a youngster, and was

already using "Nullsoft," the name of his software company, for the software he was creating at school. It was reported that in 1998 Frankel worked like a madman at Winamp, coding all day and surviving on pizza, and saying "outside's overrated!"

Frankel launched the first version of Winamp under Nullsoft in 1997. Initially launched as shareware at \$10 (Rs 440), Winamp was a huge success. Millions of people downloaded the program, and the revenue it generated ran into the tens of thousands of dollars! Although Frankel sold Nullsoft to AOL in 1999, he continued working on subsequent versions of Winamp, and completed Winamp version 5.0 in late 2003—just before he resigned from AOL.

Frankel's second work of consequence was the Gnutella P2P which he created with his partner, Tom Peppers. The system was similar to Napster; Gnutella, however, had two advantages over Napster. First, it allowed users to share all kinds of files, and not just MP3s. Also, Gnutella did not have centralised servers, so once the network was created, it could not be shut off.

After resigning from AOL, Frankel has been working on several projects, including a software called 'NINJAM' that allows several people to make real music via the Internet, and REAPER, a multi-track audio editor for Windows.

Bluff

YOUR WAY THROUGH

Gaming

Real-life heroes are few and far between, but in the gaming world, anyone can be a one. But how do you *sound* like one? Listen to Our Hero's story: He sauntered into the dark and sinister-looking dungeon with the nonchalance of a two-year old who couldn't have known better. Not surprisingly, he soon found himself *Fragged*—finished by the enemy, leaving him a useless, lifeless lump of virtual human flesh. This was no ordinary enemy, either—it was a dreaded *Camper*, who springs out of the underbrush and *tags* his unsuspecting prey. Life isn't a ball in the world of the *First Person Shooter (FPS)*.

Retiring from the world of active warfare, our hero decides to build his army and enter the world of the *Real-time Strategy (RTS) Game*, commandeering his forces to wreak havoc on his enemies' bases, while he looks upon them from a safe location.

Every once in a while, though, The Itch strikes, and he wants to feel the heat of battle once again—but not without his forces. So, in the *Tactical FPS*, he gets to kill some bad guys himself, and also seek his team's help in tight spots.

For an "out of body" experience, he turns to the *Role Playing Game (RPG)*, putting himself in some one else's shoes. He will now fight evil, or embark upon an *Adventure Game*, full of cryptic clues and mythical monsters and other such hindrances to progress.

Not content with interacting with artificially-intelligent *bots*, Our Hero decides to go online and take on the world of the *Massively Multiplayer Online RPG*, where he can interact and with other players from all over the world, brought together as a huge online civilisation.

And if boredom sets in, there is always the joy of the *Arcade Racer*—there are few things more fun than spreading a few hundred thousand dollars worth of car all over the landscape.

They're Out To Get Us!

It's been a month of terror, questionable odours and infighting here this month.

Digit's Enemy No. 1 reared its ugly head again, as we saw several of us succumbing to upset bellies and other gastronomic disasters. Ram was the first casualty, closely followed by Raaabo, who clearly underestimated the power of a wayward mushroom. Towards the middle of the month, Nimish, too, teetered on the edge, but was saved by an Unnamed Force.

And so, we've decided to invite readers who have respectable cooking skills and who value our safety to find it in their hearts to send us some good, wholesome food.

In-team tensions reached an all-time high as the Test Centre took what seems to be a blood-oath not to allow the cool new speakers into the editorial area. A stalemate has been reached, with Sanket steadfastly holding his ground

and Raaabo's less than substantial form uselessly (but relentlessly) trying to get past him.

We're no strangers to fighting over game reviews, but you know it's a slow month when we have people fighting *not* to do them. The gist of the matter was:

Raaabo: Ugh... you do this one.

Nimish: No, you do it.

Raaabo: No, you do it.

Nimish: YOU!!!

(Time wears on...)

Raaabo: I'm too busy. You'll need to do both.

Nimish: (drops unconscious in horror)

All worked out in the end, though.

On the good-news side, Brother Zivalal witnessed a new addition to his family—a little baby girl. Justifiably, he vamoosed for the rest of the month, leaving Vijay trembling at the prospect of doing the work of two men.

Makes you wonder how we ever got this issue out, doesn't it?

DIGIT DIARY

helped instead by their obvious glow.

We're also hoping for some glow-pets to keep us company on those dark nights. Or when the time comes to scare someone with a strategically placed cat in a haunted house.

IPRIEST

Preaching The Way Of The iPod

We all expected this. There is no escaping the insane popularity of the wondrous little iPods. We've built shrines for them, made clothing especially to accommodate them, pretty much let our lives revolve around them.

In a very smart-arsed move, a pastor in Houston, Texas has used the iPod to draw more people into churches and listen to the Word of God. The little marvel, he claims, teaches us a very valuable lesson—life can be simple, too. In praising the ease of use of

the iPod's user interface, Pastor Sal Sberna has given iPod worshippers the ultimate justification for their madness—it was made the way the Good Lord intended it.

"All you do on the outside is push the little button, drive the wheel and pick what usefulness you want out of your iPod," he says. "And so when Jesus talks to us about simplification, it must start on the inside."

We're tempted to start an "Innovative use of iPod" award just to felicitate the good Man of the Cloth.

CHATROOM CRYBABY

Watch Who You Tease

George Gillespie, a resident of Ohio in the USA, claims he was shamed by two men in a chat-room, and has sued them for emotional distress. He has also filed a suit against America Online (AOL) for failing to intervene and stop the humiliation. The men were



supposedly teasing Gillespie in the chat. Many stories abound, including one where one of the two 'perpetrators' travelled to Ohio to hand in a change-of-address form to the local Post Office, having them redirect Gillespie's mail to a different location.

Mike Marlowe of Alabama and Bob Charpentier of Oregon, the accused, have wasted no time registering their shock at this development. "I'm so flabbergasted with this because this has been blown out of proportion," Marlowe told Law.com.

whatweretheythinking.com

<http://checkoutthisstupidwebsite.com/>

Really, what were they thinking? checkoutthisstupidwebsite.com is devoted to asinine, insipid and useless humour. If you can call it humour. As a supposed ideology, the site states: "Sometimes you follow your heart, sometimes your heart takes a fart." Hulloo! We are not laughing!

The site heads visitors to 'Thoughts of the Stupid', 'Stupid News' and more 'Stupid Links' apart from numerous silly pictures, parodies etc. Links boasting 'Celebrities' and 'Laws' contain nothing more than morphed pictures of actors and odd laws

from Oz. One of the many pictures featured on the site has "Halloween flashers"—men showing off pumpkins! There's more weird stuff here than anywhere else—from blurred images of alien sightings to kinky gizmos. We are still struggling to fathom if the "For sale" placard is for real or is just another 'stupid' idea.

And almost half of the homepage has been devoted

to 'Stupid Shopping', where, among many things, a poster labelled 'Attack of the 50-foot woman' is up for sale. The less said the better. And many of the links don't work. In fact, the games link informs you that work is in progress and asks you to play a Flash game for dimwits meanwhile. And they have the gall to thank you for wasting your time!

Steer clear. You will lose precious little.



"We just made fun of the guy."

Naturally, apart from the obvious sensationalism about being the first case of its kind, this is bound to go nowhere. Firstly, there is the fact that none of this humiliation can be proved. More importantly, chats, blogs and online forums are shining examples of free speech on the internet—the ruling philosophy being that if you can't handle it, get out.

YOU'VE BEEN SERVED

C U In Court!

The long arm of the Law has found its way into your pocket now.

Gone are the days when you could run from being served with law suits. In South Korea, prosecutors will now use text messages to tell people they've been indicted, adding another dimension to cell phone paranoia. It obviously wasn't enough for them

that cell phones have been accused of impotence, cancer and everything in between; now people must wonder whether the happy little vibration in their pockets is a date with Justice.

A justified move, though. About 75 per cent of the South Korean population has cell phones, so this way, they can be easily reached, without a poor mailman running after them to serve them their papers.

With cellular penetration in India reaching humongous proportions, we don't doubt that our courts, too, will go mobile soon. Thankfully, though, the service isn't supposed to give you a heart attack in the middle of your meal; people will be informed of their legal notices only if they subscribe to the service. Of course, it's a hell of an idea. Why wait for the postman to tell you it's time to skip the country? ■

Blog WATCH

There are many blogs about blogs, and even blogs about blogs about blogs. Here we have one view of why bloggers blog, and some rambling about blogging about blogging. And yeah—there's something way out, about African warlords blogging.

The Blog Herald
www.blogherald.com

African Warlords using blogs

Rebel leaders in Sudan are using blogs to communicate with each other as part of an ongoing feud as to who controls the country's main rebel group.

The leaders of the main rebel movement in Sudan's Darfur region were once "brothers in arms". But last year, the two powerful men had a falling out, and each proclaimed he was the rightful president of the Sudanese Liberation Army. But as much as things getting ugly, no bullets were used, they battled against each other via their blogs. ...

Bizarre really. When even warlords have blogs who's left?

Boing Boing
www.boingboing.net

There is no such thing as a blogger

I've been thinking of what I am—about what any media person in the digital age is. And it occurred to me that there is no such thing as blogging. There is no such thing as a blogger. Blogging is just writing—writing using a particularly efficient type of publishing technology. Even though I tend to still use Microsoft Word on the way to being published, I am not; say, a Word-er or Wordder. It's just software, people! (Link to the article: <http://snipurl.com/blogfeb1>)

Jamsi
<http://workboxers.com>

Popularity contest?

The problogging market I think is at its peak. There seems to be more people starting blogs about blogs than blogs themselves (whoa what a pickle). Talking about blogs must be the most popular niche and I mean why not.

Darren the problogger himself has mentioned multiple times that his problogger site doesn't bring in any serious amount of revenue. So why do people blog about blogs? Give advice to bloggers? Help bloggers earn money from their blogs?

Bloggers Blog
<http://www.bloggersblog.com/newblogs/>

Blogrolling in Our Time

An article (at <http://snipurl.com/blogfeb3>) by Richard Homan includes an interesting explanation of why people blog. An excerpt:

"Why do people blog? You might as well ask why do fools fall in love, or what's so funny 'bout peace, love and understanding. People blog because cave paintings are obsolete, but the need to say "I was here" never goes away. And very much like cave painting, Tuvan throat singing and late-braking on a off-camber, decreasing-radius left-hander, some folks are naturally good at it while others get buried in the weeds a time or two before reconsidering their life path."

Vista will drive users to Linux

rajas700

On A Warning

The cost of migrating from Windows XP to Windows Vista will encourage more companies to seriously consider moving to desktop Linux, the chief executive of open-source and networking company Novell said on Monday.

Speaking at Brainshare, the company's annual European user conference in Barcelona, Novell CEO Jack Messman claimed that the cost of moving desktops to the next version of Windows will be significantly higher than migrating to desktop Linux.

"The cost of migrating to Windows XP to Vista will be higher than the cost of migrating to Linux and that will push migrations to Linux," Messman said.

Source: Google News

tuxfan

Brainiac

Location: Mumbai

This assumes that people want to migrate to something from WinXP. If you can't migrate, stay where you are. For die hard windows fans, it is easier to stay with XP then go to Linux.

A new release of Windows will never increase Linux users. This seems to be over-enthusiastic thinking.

cryptid

Warmed-Up Nerd

Location: Hyderabad

Well i have a strong feeling that this will happen (i.e ppl shifting from Windows to linux) common with a OS costing as much as a new alien PC who would even think of giving it a try and for all the ppl who are thinking to sticking to XP. I have only 1 thing to say ,y u want to stick to a Fiat premier padmini when some 1 is giving away their Merc for Free, common guys y dont u give linux a try start with Ubuntu its a good Distro for noobs, ppl have a wrong notion that linux is for only experienced and SUPER users,,, once u give Ubuntu a try u will feel that this is totally wrong.

~Phenom~

Resident Techie

Location: CYBERYARD

I will stay with XP no matter how vista looks and do coz XP is doing a Fine job for me.

techmax

Analogue Novice

Location: Inside your system!!!!

Arre bhai, jo achha lage use karo.
Jhagadne ki kya baat hai???

The Technology Teacher

I found that *Digit* is one of the best magazines selling today in the market. It has made me power my PC in all aspects. When I first bought your magazine in February '03, I was a novice, but today I have opened my own computer training centre at home. I don't even require the services of a mechanic, engineer or professional to fix any hardware/software problems. Thanks to you.

Subodh

I've been a regular reader of *Digit* for the past three years and I think the term "Your Technology Navigator" is apt. I am very keen to learn about PDAs, but there is very little in *Digit* about this. I suggest you make a *Fast Track* to PDAs and handhelds. Thanks!

Siddharth

Dear Subodh and Siddharth,
Thanks for the vote of confidence. It's makes all our work worthwhile, and it's rewarding to hear readers tell us that we've really helped them change their lives.

Siddharth, we covered mobile telephony in January 2006, and though we didn't specifically cover PDAs, the technologies remain the same. We cover the Handheld segment in articles off and on, but a *Fast Track* on PDAs is doubtful. The reason for this is that we're seeing a convergence of PDAs and mobiles, forming the all-new smartphone segment. This segment will see devices only get "smarter," and incorporate all of the useful features of a PDA. We will make sure to further cover mobile technologies in upcoming issues.

— Associate Editor

Digit Archive

You should have archives of all your previous issues, so that if we lose the hardcopy, we can still find it online or on the DVD. There are other magazines out there that follow this policy. I have lost one of my copies of *Digit* in which there is the ASP script to send form results to mail. Now I have no way of finding it.

Dipesh

Dear Dipesh,
We provide the past 12 months issues of *Digit* on our DVD in PDF format very often. Though it's not a monthly feature, we do provide this about three or four times a year. We will look into the matter of providing these PDFs more frequently.

—Associate Editor

More about 'My Desktop'

I am a regular reader of *Digit*, and initially, I hadn't subscribed because I used to read your magazine in my college library. Finally, my interests peaked, and I too turned into a *Digit* fan. I truly appreciate your hard work and the software collection in your CD/DVD.

I also want to tell you that *Digit* has helped me buy lot of commodities and keeps me updated about prices. I also want to thank Agent 001 for helping me troubleshoot my computer and mobile problems.

Prathamesh R Tawde

Dear Prathamesh,
Your suggestions are very good, and we will try and increase the space given to the "My Desktop" section to include at least a basic description of how the person customised his or her desktop. I thank you for the support, and hope you will keep reading my column and troubleshooting solutions.

—Agent 001

Expensive products

I enjoy reading the New & Notable section, but have noticed that the products are very costly, and out of reach for the general public. I suggest that you include an article on older products from niche segments such as eye-catching cabinets, mice, keyboards, Web cams, etc.

Ashis Saxena

Dear Ashis,
By the very definition of the New & Notable section, we cannot include any products unless they are both new as well as notable. This means that if we find products such as the ones you've mentioned that stand out from the crowd, we will definitely include them in this section.

Apart from this section, we also have our regular tests, which extensively cover almost all IT product segments within a year. This time, for example, you will have already seen the extensive keyboard and mouse shootout that we have covered. This should suffice to help you make an informed buying decision about these products. Apart from the tests, we also provide you with the A-list, which gives you a quick reference to the best products from almost all the sections. We will also try and include more product tests on a regular basis.

— Associate Editor



Write to the Editor

E-mail: editor@thinkdigit.com

Snail Mail: The Editor, Digit, D-222/2, Om Sagar Building, MIDC, TTC Industrial Estate, Nerul, Navi Mumbai 400 706

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Inbox

Software missing?

I recently purchased your January 2006 issue. On the magazine cover, it was stated that in the Internet section there was the Zone Alarm Internet Security Suite, and also that in the System section, there was Windows 98 SE Service Pack 2.1. I purchased the magazine because of this.

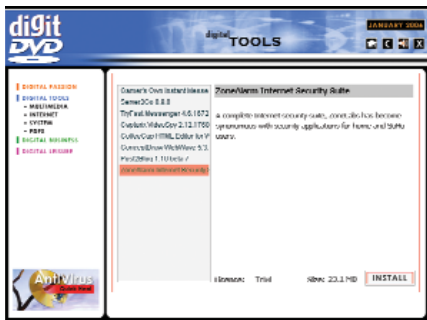
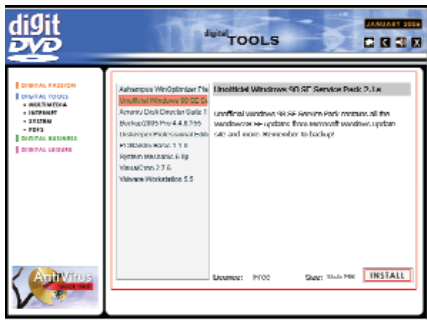
To my surprise, neither of the software were on the CD given along with the magazine. Kindly look in the matter.

Ashok Kumar D

Dear Ashok,

Both the software you've mentioned are on the Digit DVD. You will not be able to find them on the CD. Very often, people confuse the contents of the DVD and CD, and such misconceptions happen. The screenshots below should help you find the software you mentioned.

— Associate Editor



A Goof-Up

I find Digit an extremely useful tool to keep myself updated with what's happening in the computer world. However, your January 2006 issue wasn't up to the mark. Firstly, the CD I received is defective. Secondly, the demo of *Need For Speed Most Wanted* (NFSMW) was in this issue, whereas another leading magazine had it in the December 2005

issue. I had to get the demo from one of my friends who purchases that magazine.

Moreover, the picture model, Brooke Burke, on the DVD cover, is that of *Need For Speed Underground 2* (NFSU 2), and not of NFSMW (Josie Maran). I was simply shocked to see a magazine like Digit making such mistakes. I hope the game demos will be given on time, and that something will be done about the defective CD.

Sanjit Kumar Keshri

Dear Sanjit,

Our apologies for the cover. It was a goof-up, and we were about to include it in a corrigendum when we got your mail. That was a totally avoidable mistake, and will not happen again.

The NFSMW demo could not be included in the December issue because of space constraints—basically, the DVD was packed to the brim. Rest assured, most often you will get everything as and when it is released!

— Associate Editor

Wannabe DJ?

I am a regular reader of your mag and am mad about it. You guys rock. I came across it at a newsstand, and buy it every month from my pocket money. A student in the 11th standard, I have made an account in Digit Patron only last month, as I didn't know non-subscribers could have an account.

Can you include more sound and DJ software? I love the profession. Can you include a trial version of dance ejay 7, and could you let me know from where I can get the full version?

If you can, please also include an article on DJs using various software. Can you also tell me that how I can have an account on your forum?

Priyam Malhotra

Dear Priyam,

We're so glad to know that you not only appreciate our magazine, you buy it off your precious pocket money. Regarding the Digit Patron programme, yes, it's for anyone who buys Digit. Your suggestions for DJ software have been noted, and we'll try to include it on a future CD/DVD. As for the article, we've certainly been mulling over it for quite some time, and will be able to fulfil this wish of yours soon. For an account on our forum, log on to www.thinkdigit.com/forum and click on the Register link at the top left. Follow the instructions thereafter.

— Associate Editor

A Record Battle?

I am 14 years old and have been reading Digit since I was eight! You mentioned that your youngest reader was in the seventh standard, but I've been reading your magazine since I was in fourth grade. Yours is the best computer magazine in the universe! I aspire to work in embedded technologies, and would love it if Digit wrote an article on embedded software programming.

I would also like if you could make a Fast Track to the Windows Registry, I would also like you to make a section on your magazine on Linux—I think it's the future of OSes. I also think you should also include a few pages on programming in C++ or Java.

Akshaykirti Sharma

I was nine when I picked up my first copy of Digit! I subscribed the same year, and am still a subscriber. Digit inspired me to do C++ at the age of 10, and Java and SQL at the age of 11. I'm now in the ninth standard, and perhaps the most tech-savvy guy in town, courtesy Digit!

I love your magazine—every single article—but the best innovation you have brought to it is the full-length reviews with screenshots of new games. Do try to include more freeware, especially multimedia software, rather than demos and shareware, on your DVD and CDs. Keep innovating!

Ranjodh Dhaliwal

Dear Akshay and Ranjodh, Thanks for the suggestions, many of which should be implemented soon. We were pleasantly surprised to hear that you've been reading Digit since the fourth and fifth standards respectively. The age at which our readers start reading Digit seems to be constantly dipping! We try to keep the language simple in most articles, mainly so younger and not-so-tech-savvy people can enjoy them. Still, fourth standard? That's got to be a new record!

The software list in the DVD or CD interface is alphabetically sorted to show freeware first, and then demos or shareware. This helps us include what's best, while also promoting all the good free software out there. We will continue to include the best software, whether free or paid!

The Fast Track ideas are great, we'll try and fit them into our plans!

—Associate Editor

LETTERS
OF THE
MONTH

Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse



“No eLay,” says Electra

Here's this month's eBay department: last year, actress Carmen Electra—who's in the news after a long time—put up “a date with her” on eBay to raise money for The National Prostate Cancer Coalition. According to British tabloid *The Sun*, she now admits the huge amounts of cash being bid have left her “highly

concerned.” She told an American TV show: “They were bidding for a date with me, which was kind of weird, but the money went to charity, so I thought it would be a nice thing to do. (But) it went up to some crazy number and I actually felt obligated to, like, sleep with the guy.”

He pay for the day, so why the lay?

Blogwash!

Bloggers are a strange breed, and Chinese bloggers are no exception. A peek into the world of Chinese blogging reveals there's some strange goings-on. There are blogs that have nothing in them that qualify them as such.

Take a look at www.1baiwan.com. It's absolutely hilarious—definitely worth a visit, even if it's entirely in Chinese! It features lots and lots of little tiles, and each links to a company or some other entity. Basically, each tile is a mini-ad of sorts; the point seems to be for everyone to grab a couple of



Many such pics do not a blog make

pixels of real estate, ultimately filling up the page. Now who'd want to advertise in a 4x4 space? For some reason, the site is supposed to be a blog.

Another example of Chinese blogs just not cutting it is that of the so-called “Super Voice Girl” Feng Jiamei, who

apparently has a huge fan following in China. And what does she do to draw visitors to her blog? Put up a bunch of sexy photos of her wrapped in a towel while reclining on a bed. The point is, there's not much else on the “blog.”

So what (English-language) non-blogs have you come across?

Smut For Kids

An eight-year-old girl received adult MMS messages from a T-Mobile UK service called Hot Babes. The girl's mother contacted the T-Mobile help desk to stop the arrival of further pictures featuring bare-breasted beauties, but was informed that the company could do nothing: the messages weren't coming from a service using a five-digit shortcode—it had four digits.

Usually, sending “Stop” to any five-digit code cancels any subscription. But the Hot Babes were coming from a four-digit number, and “Stop” doesn't work.

There happen to be ways to stop the subscription, which the helpdesk at T-Mobile wasn't aware of. They've been informed, and are working on it.

We have no idea how the kid got subscribed to the service in the first place.

Podsermons!

In his first Christmas message, Pope Benedict warned against technology, saying people risked ending up in “spiritual barrenness.”

Disregarding that warning, vicars in England are putting sermons on the Internet so parishioners can listen to them on their iPods. According to *The Mirror*, Rev Shannon Ledbetter of St Mary's church, Knowsley, Merseyside, said: “For the elderly and housebound this is fantastic, all you need to do is fix them up with an iPod and they're good to go. For the

young also, there is so much information there, which can help to answer their questions about their faith.” Now, honestly, Rev Ledbetter, how many youngsters will tune their iPods into a sermon?

This piece of news comes just a couple of months after the Bible was translated to SMS-speak in Australia. Many—including the Pope—aver that an obsession with tech goes against the grain of spirituality. But if the people of the world are to choose, they definitely seem to be going the tech way.

3-Easy-Steps to Freebies!

- 1 Log on to www.thinkdigit.com/digitpatron to register.
- 2 Enter this 16-digit code and score points (you will find your code at this place every issue)
- 3 Your points get added every month and can be redeemed for exciting gifts!



For any queries regarding the Digit Patron programme, e-mail us at digitpatron@jasubhai.com